



Inventors: Preuss et al.  
Title: "Plant Chromosome Compositions And Methods"  
Atty. Ref. No.: 30880/30002A  
Serial No.: 09/531,120  
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Fig. 1  
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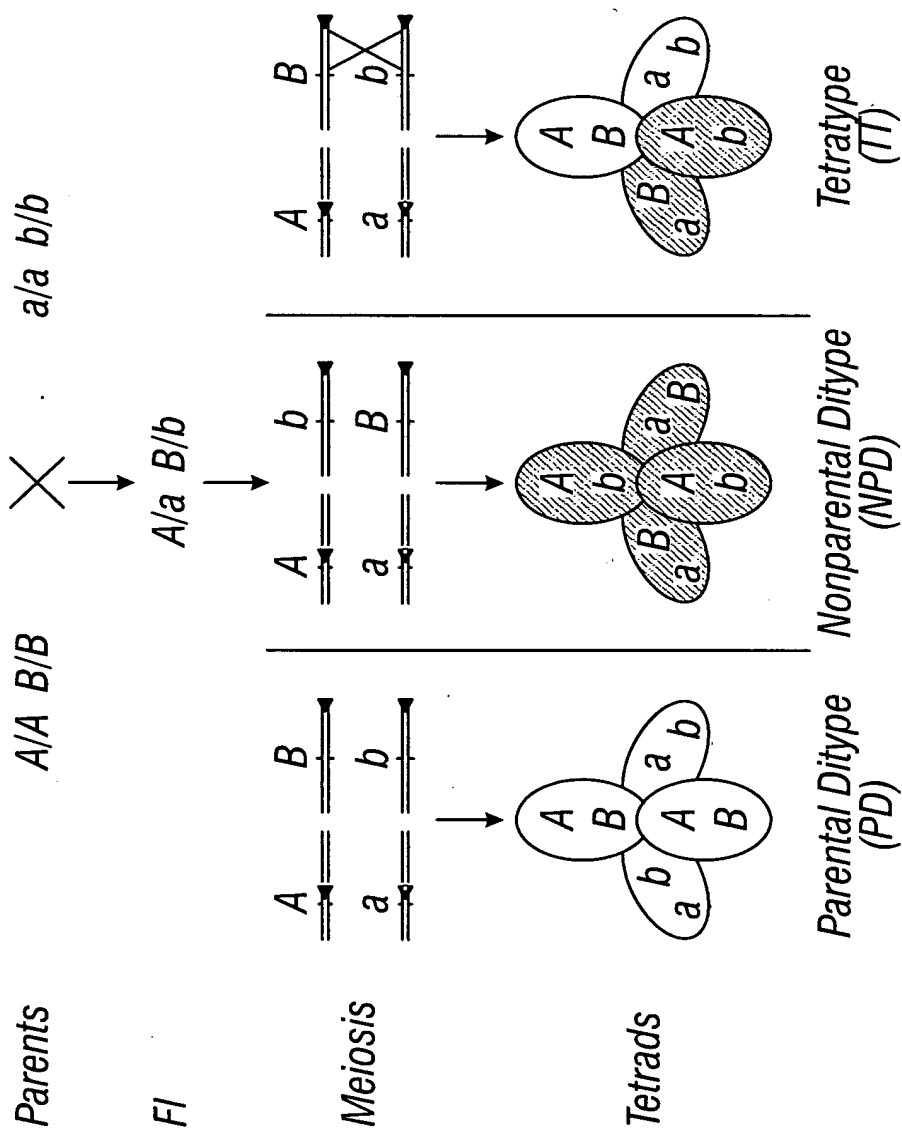


FIG. 1

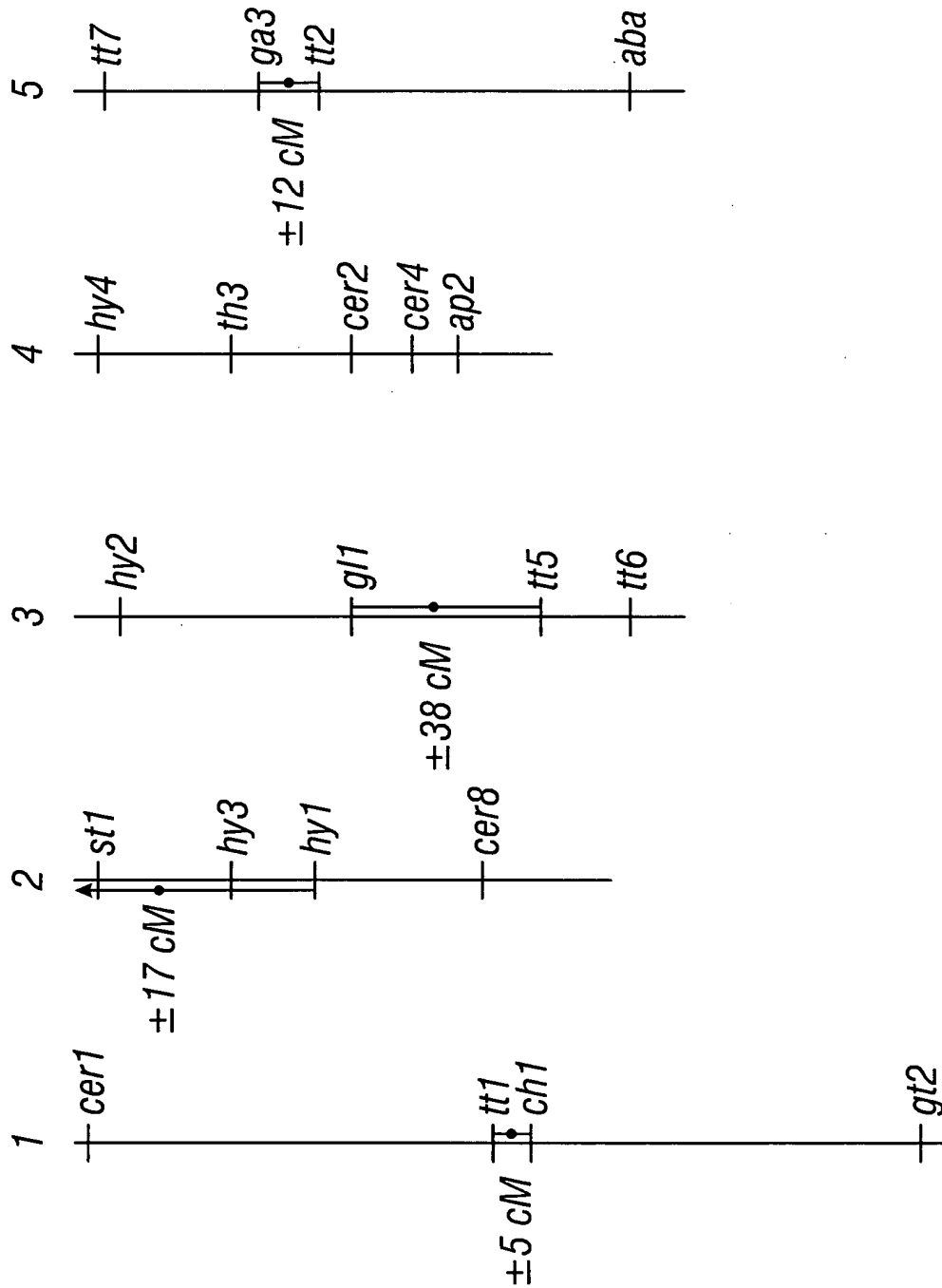
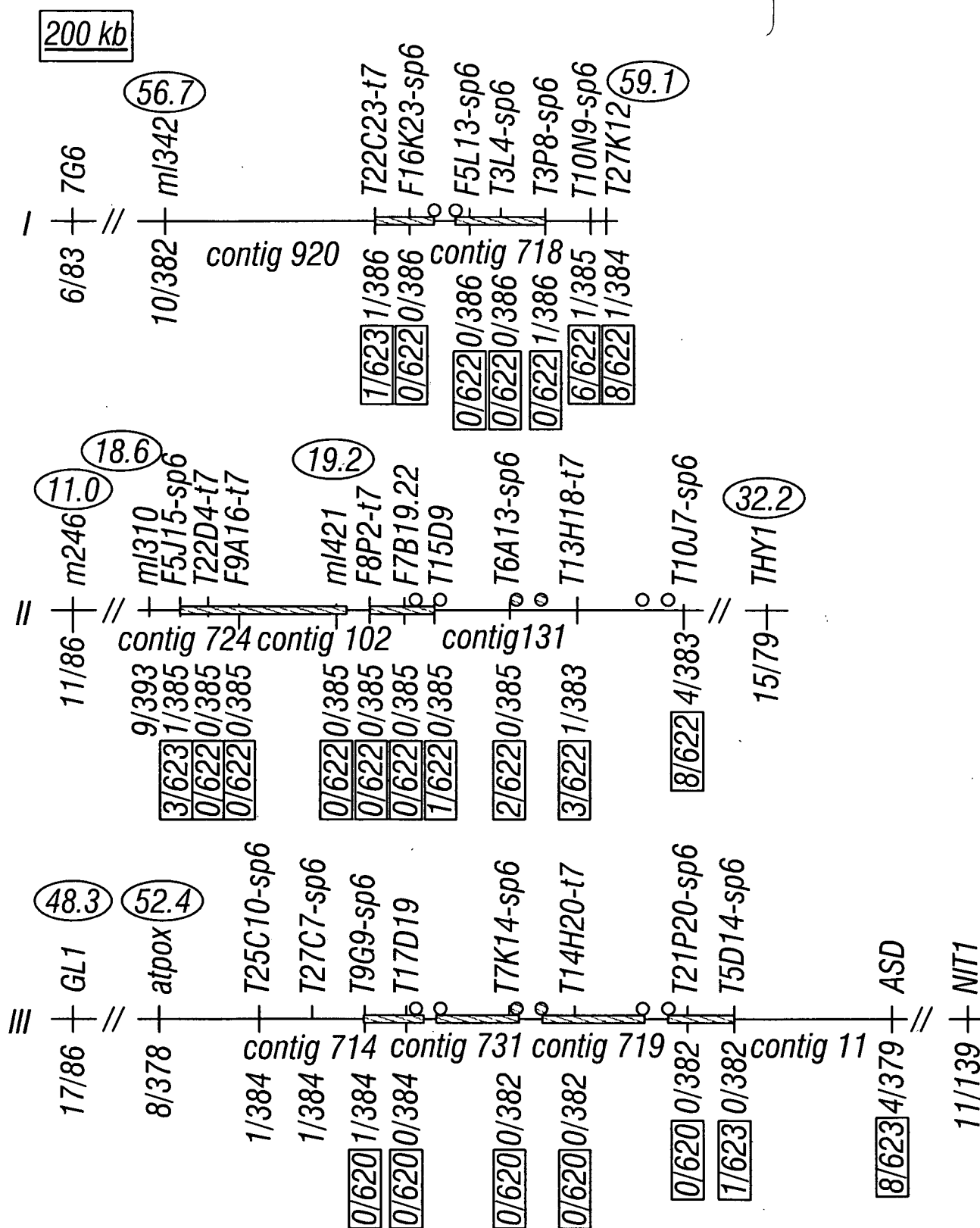


FIG. 2



**FIG. 3A**

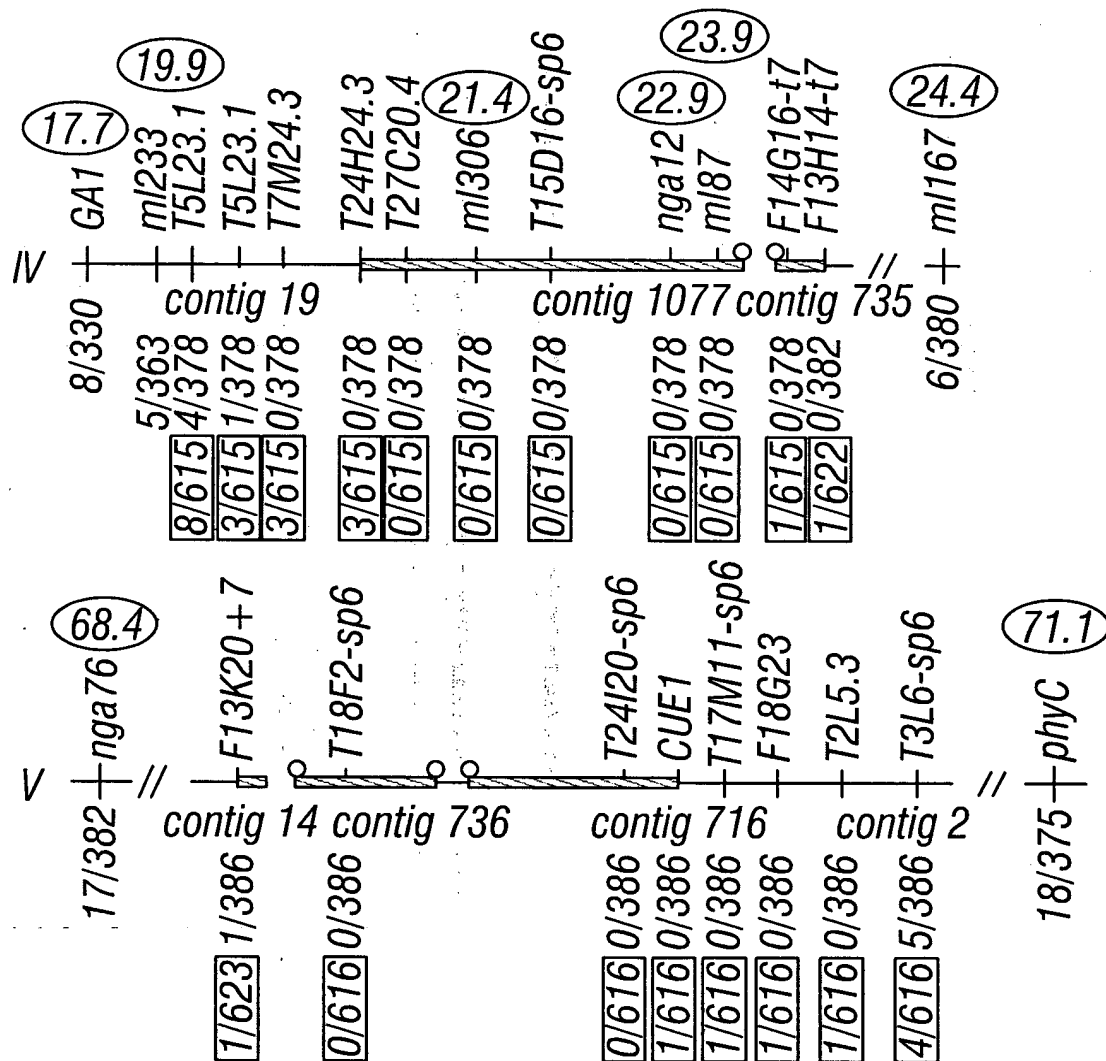


FIG. 3B



	A	B	C
1	T1-1	PLA391	tetrad seed stock
2	T1-2	PLA392	tetrad seed stock
3	T1-3	PLA393	tetrad seed stock
4	T1-4	PLA394	tetrad seed stock
5			
6	T2-1	PLA395	tetrad seed stock
7	T2-2	PLA396	tetrad seed stock
8	T2-3	PLA397	tetrad seed stock
9	T2-4	PLA398	tetrad seed stock
10			
11	T3-1	PLA399	tetrad seed stock
12	T3-2	PLA400	tetrad seed stock
13	T3-3	PLA401	tetrad seed stock
14	T3-4	PLA402	tetrad seed stock
15			
16	T4-1	PLA403	tetrad seed stock
17	T4-2	PLA404	tetrad seed stock
18	T4-3	PLA405	tetrad seed stock
19	T4-4	PLA406	tetrad seed stock
20			
21	T5-1	PLA407	tetrad seed stock
22	T5-2	PLA408	tetrad seed stock
23	T5-3	PLA409	tetrad seed stock
24	T5-4	PLA410	tetrad seed stock
25			
26	T6-1	PLA411	tetrad seed stock
27	T6-2	PLA412	tetrad seed stock
28	T6-3	PLA413	tetrad seed stock
29	T6-4	PLA414	tetrad seed stock
30			

**FIG. 4A**

	A	B	C
31	T7-1	PLA415	tetrad seed stock
32	T7-2	PLA416	tetrad seed stock
33	T7-3	PLA417	tetrad seed stock
34	T7-4	PLA418	tetrad seed stock
35			
36	T8-1	PLA419	tetrad seed stock
37	T8-2	PLA420	tetrad seed stock
38	T8-3	PLA421	tetrad seed stock
39			
40	T10-1	PLA422	tetrad seed stock
41	T10-2	PLA423	tetrad seed stock
42	T10-3	PLA424	tetrad seed stock
43			
44	T11-1	PLA425	tetrad seed stock
45	T11-2	PLA426	tetrad seed stock
46	T11-3	PLA427	tetrad seed stock
47			
48	T12-1	PLA428	tetrad seed stock
49	T12-2	PLA429	tetrad seed stock
50	T12-3	PLA430	tetrad seed stock
51			
52	T13-1	PLA431	tetrad seed stock
53	T13-2	PLA432	tetrad seed stock
54	T13-3	PLA433	tetrad seed stock
55			
56	T14-1	PLA434	tetrad seed stock
57	T14-2	PLA435	tetrad seed stock
58	T14-3	PLA436	tetrad seed stock
59			
60	T18-1	PLA437	tetrad seed stock

**FIG. 4B**

	A	B	C
61	T18-2	PLA438	tetrad seed stock
62	T18-3	PLA439	tetrad seed stock
63			
64	T20-1	PLA440	tetrad seed stock
65	T20-2	PLA441	tetrad seed stock
66	T20-3	PLA442	tetrad seed stock
67			
68	T27-1	PLA443	tetrad seed stock
69	T27-2	PLA444	tetrad seed stock
70	T27-3	PLA445	tetrad seed stock
71			
72	T28-1	PLA446	tetrad seed stock
73	T28-2	PLA447	tetrad seed stock
74	T28-3	PLA448	tetrad seed stock
75			
76	T29-1	PLA449	tetrad seed stock
77	T29-2	PLA450	tetrad seed stock
78	T29-3	PLA451	tetrad seed stock
79			
80	T30-1	PLA452	tetrad seed stock
81	T30-2	PLA453	tetrad seed stock
82	T30-3	PLA454	tetrad seed stock
83	T30-4	PLA455	tetrad seed stock
84			
85	T31-1	PLA456	tetrad seed stock
86	T31-2	PLA457	tetrad seed stock
87	T31-3	PLA458	tetrad seed stock
88			
89	T32-1	PLA459	tetrad seed stock
90	T32-2	PLA460	tetrad seed stock

**FIG. 4C**

	A	B	C
91	T32-3	PLA461	tetrad seed stock
92	T32-4	PLA462	tetrad seed stock
93			
94	T33-1	PLA463	tetrad seed stock
95	T33-2	PLA464	tetrad seed stock
96	T33-3	PLA465	tetrad seed stock
97			
98	T34-1	PLA466	tetrad seed stock
99	T34-2	PLA467	tetrad seed stock
100	T34-3	PLA468	tetrad seed stock
101	T34-4	PLA469	tetrad seed stock
102			
103	T35-1	PLA470	tetrad seed stock
104	T35-2	PLA471	tetrad seed stock
105	T35-3	PLA472	tetrad seed stock
106	T35-4	PLA473	tetrad seed stock
107			
108	T36-1	PLA474	tetrad seed stock
109	T36-2	PLA475	tetrad seed stock
110	T36-3	PLA476	tetrad seed stock
111	T36-4	PLA477	tetrad seed stock
112			
113	T37-1	PLA478	tetrad seed stock
114	T37-2	PLA479	tetrad seed stock
115	T37-3	PLA480	tetrad seed stock
116	T37-4	PLA481	tetrad seed stock
117			
118	T38-1	PLA482	tetrad seed stock
119	T38-2	PLA483	tetrad seed stock
120	T38-3	PLA484	tetrad seed stock

**FIG. 4D**

	A	B	C
121	T38-4	PLA485	tetrad seed stock
122			
123	T39-1	PLA486	tetrad seed stock
124	T39-2	PLA487	tetrad seed stock
125	T39-3	PLA488	tetrad seed stock
126			
127	T40-1	PLA489	tetrad seed stock
128	T40-2	PLA490	tetrad seed stock
129	T40-3	PLA491	tetrad seed stock
130			
131	T41-1	PLA492	tetrad seed stock
132	T41-2	PLA493	tetrad seed stock
133	T41-3	PLA494	tetrad seed stock
134	T41-4	PLA495	tetrad seed stock
135			
136	T42-1	PLA496	tetrad seed stock
137	T42-2	PLA497	tetrad seed stock
138	T42-3	PLA498	tetrad seed stock
139			
140	T43-1	PLA499	tetrad seed stock
141	T43-2	PLA500	tetrad seed stock
142	T43-3	PLA501	tetrad seed stock
143			
144	T44-1	PLA502	tetrad seed stock
145	T44-2	PLA503	tetrad seed stock
146	T44-3	PLA504	tetrad seed stock
147	T44-4	PLA505	tetrad seed stock
148			
149	T45-1	PLA506	tetrad seed stock
150	T45-2	PLA507	tetrad seed stock

**FIG. 4E**

	A	B	C
151	T45-3	PLA508	tetrad seed stock
152	T45-4	PLA509	tetrad seed stock
153			
154	T46-1	PLA510	tetrad seed stock
155	T46-2	PLA511	tetrad seed stock
156	T46-3	PLA512	tetrad seed stock
157	T46-4	PLA513	tetrad seed stock
158			
159	T48-1	PLA514	tetrad seed stock
160	T48-2	PLA515	tetrad seed stock
161	T48-3	PLA516	tetrad seed stock
162			
163	T49-1	PLA517	tetrad seed stock
164	T49-2	PLA518	tetrad seed stock
165	T49-3	PLA519	tetrad seed stock
166	T49-4	PLA520	tetrad seed stock
167			
168	T52-1	PLA521	tetrad seed stock
169	T52-2	PLA522	tetrad seed stock
170	T52-3	PLA523	tetrad seed stock
171			
172	T53-1	PLA524	tetrad seed stock
173	T53-2	PLA525	tetrad seed stock
174	T53-3	PLA526	tetrad seed stock
175			
176	T55-1	PLA527	tetrad seed stock
177	T55-2	PLA528	tetrad seed stock
178	T55-3	PLA529	tetrad seed stock
179			
180	T56-1	PLA530	tetrad seed stock

**FIG. 4F**

	A	B	C
181	T56-2	PLA531	tetrad seed stock
182	T56-3	PLA532	tetrad seed stock
183	T56-4	PLA533	tetrad seed stock
184			
185	T57-1	PLA534	tetrad seed stock
186	T57-2	PLA535	tetrad seed stock
187	T57-3	PLA536	tetrad seed stock
188	T57-4	PLA537	tetrad seed stock
189			
190	T58-1	PLA538	tetrad seed stock
191	T58-2	PLA539	tetrad seed stock
192	T58-3	PLA540	tetrad seed stock
193			
194	T60-1	PLA541	tetrad seed stock
195	T60-2	PLA542	tetrad seed stock
196	T60-3	PLA543	tetrad seed stock
197	T60-4	PLA544	tetrad seed stock
198			
199	T61-1	PLA545	tetrad seed stock
200	T61-2	PLA546	tetrad seed stock
201	T61-3	PLA547	tetrad seed stock
202	T61-4	PLA548	tetrad seed stock
203			
204	T62-1	PLA549	tetrad seed stock
205	T62-2	PLA550	tetrad seed stock
206	T62-3	PLA551	tetrad seed stock
207			
208	T63-1	PLA552	tetrad seed stock
209	T63-2	PLA553	tetrad seed stock
210	T63-3	PLA554	tetrad seed stock

**FIG. 4G**

	A	B	C
211			
212	T64-1	PLA555	tetrad seed stock
213	T64-2	PLA556	tetrad seed stock
214	T64-3	PLA557	tetrad seed stock
215	T64-4	PLA558	tetrad seed stock
216			
217	T66-1	PLA559	tetrad seed stock
218	T66-2	PLA560	tetrad seed stock
219	T66-3	PLA561	tetrad seed stock
220			
221	T68-1	PLA562	tetrad seed stock
222	T68-2	PLA563	tetrad seed stock
223	T68-3	PLA564	tetrad seed stock
224			
225	T69-1	PLA565	tetrad seed stock
226	T69-2	PLA566	tetrad seed stock
227	T69-3	PLA567	tetrad seed stock
228			
229	T70-1	PLA568	tetrad seed stock
230	T70-2	PLA569	tetrad seed stock
231	T70-3	PLA570	tetrad seed stock
232			
233	T71-1	PLA571	tetrad seed stock
234	T71-2	PLA572	tetrad seed stock
235	T71-3	PLA573	tetrad seed stock
236			
237	T72-1	PLA574	tetrad seed stock
238	T72-2	PLA575	tetrad seed stock
239	T72-3	PLA576	tetrad seed stock
240	T72-4	PLA577	tetrad seed stock

**FIG. 4H**



	A	B	C
241			
242	T73-1	PLA578	tetrad seed stock
243	T73-2	PLA579	tetrad seed stock
244	T73-3	PLA580	tetrad seed stock
245			
246	T74-1	PLA581	tetrad seed stock
247	T74-2	PLA582	tetrad seed stock
248	T74-3	PLA583	tetrad seed stock
249			
250	T75-1	PLA584	tetrad seed stock
251	T75-2	PLA585	tetrad seed stock
252	T75-3	PLA586	tetrad seed stock
253			
254	T78-1	PLA587	tetrad seed stock
255	T78-2	PLA588	tetrad seed stock
256	T78-3	PLA589	tetrad seed stock
257			
258	T79-1	PLA590	tetrad seed stock
259	T79-2	PLA591	tetrad seed stock
260	T79-3	PLA592	tetrad seed stock

**FIG. 4I**

Chromosome #	Marker name	name used in '99 manuscript	Marker Type	Public?
1	nga59		SSLP	YES
1	nga63		SSLP	YES
1	m59		CAPS (BstU I)	YES
1	g2395		CAPS (Xba I)	YES
1	m235		CAPS (Hind III)	YES
1	athZFPG		SSLP	YES
1	SO392		SSLP	YES
1	UFO		CAPS (Taq I)	YES
1	Cxc750		SSLP	NO
1	7G6		CAPS (Acc I)	NO
1	AlG1		CAPS (Mnl I)	NO
1	m163		CAPS (Nla III)	NO
1	m1342	m1342	CAPS (Hinf I)	NO
1	T22C23-t7	T22C23-t7	CAPS (Mnl I)	NO
1	T5D18-sp6		CAPS (Acl I)	NO
1	F16K23-sp6	F16K23-sp6	SSLP	NO
1	T19K14-sp6		SSLP	NO
1	F5L13-sp6	F5L13-sp6	CAPS (Cac8 I)	NO
1	T3L4-sp6	T3L4-sp6	CAPS (Mae III)	NO
1	T3P8-sp6	T3P8-sp6	CAPS (Hae III)	NO

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Fig. 5A-1  
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**FIG. 5A-1**

Forward Primer

CGCCAAAGACTACGAAATGATC  
GGTCTGGTTATGCCGTGAAG  
AAATGGCCCAACGATCAGAAGATAG  
CAAGTCGCAACGGAAAATG  
GAAGTACAGCGGCTCAAAAAGAAG  
GTTGACTTGTATTTGATTTCTTTTC  
AAGATAAAGCAGCGAATGTGTC  
TACCAGCATACAGGAGAACG  
TCCATACCTAAGTTCACAAG  
GAAGTCCGATCTGTTTGAAG  
ATTCAATGAGTGGAAAGGGTAGAG  
AAGCTTGATTTCTGTGGTTTTC

Reverse Primer

ATAATAGATAAAGAGCCCCACAC  
GTTTTACTTAGTCCAATGGTAG  
GAAGTCCGGCATGTTATCACCCCAAG  
AAACTACGCCCTAACCACTATTCTC  
TTGCTGCCCATGTAATACCTAAGTG  
CGAGTGATTTCCCTTTTGCTACC  
CGAAAGCCGTAACCTAGATAATAAG  
CCTGATTGCAGTTTATTATACC  
AGGGCGAGTAAATCAATC  
ATAAAAAGCCGGAGATGGTTG  
CTCAGCCAAAGAATCAAGTAGAG  
AGAAATCCTTAGCCGTCCTG

FIG. 5A-2

1	T10N9-sp6	T10N9-sp6	SSLP	NO
1	T27K12		SSLP	YES
1	jcc3		CAPS (Nla III)	NO
1	GPCml19		CAPS (Fnu4H I)	NO
1	nga280		SSLP	YES
1	nga128		SSLP	YES
1	ETR		CAPS (Nco I)	YES
1	TAG1		SSLP	YES
1	AthATPASE		SSLP	YES
1	nga692		SSLP	YES
2	nga1145		SSLP	YES
2	m246		CAPS (Mae III)	YES
2	m1310		SSLP	NO
2	F5J15-sp6	F5J15-sp6	CAPS (Fhu4h I)	NO
2	F28M8-t7		CAPS (Mse I)	NO
2	F16D14-t7		SSLP	NO
2	T22D4-t7	T22D4-t7	CAPS (Hinf I)	NO
2	T2015-t7		SSLP	NO
2	F9A16-t7	F9A16-t7	SSLP	NO
2	m1421b	m1421b	CAPS (Hae III)	NO
2	F8P2-t7	F8P2-t7	SSLP	NO
2	T15D9-19	T15D9	SSLP	NO

FIG. 5B-1

AGCCCTTGGATCATATCTTTAGC

GAATCTTTGCAACGAGTGG  
TTACCCCGCAGGAAAGTATG

GCCTTGGATGATCAGTGGTG

GGCTACTGGTCAAATCATTC  
GCGGCTGATGATCTCCACCTC

GGCCCAAGAAGCCCAACAC  
CTATTCTAGAAGATTGTTAGGATTAC  
CGTCTGTATGGATTCTGAGC  
ACCGCGTCGTTGGAGG  
AAACTGATATTGTAGATGTGTATTCG  
ATTAGAGTTTTCGCTAGAAAGATGG  
CATCGTCATATGGGTTGTTC  
AACTCTGTACGTGGTGGA  
AAGTTATGCAAAATGTTATGACG  
AGAGATCCCCCTGTTACTAAAGCCTATTCTG

ACTTCATCACTTGC GGACTG  
ACCGGAAGTGTGGCTGTTG  
ATGCCCTATTTAGCCCTTTTATAG  
TGAGAGGTGCAAAATCATAACAG  
GGCCGCGTAAGAGGAGAC  
CGTTCGAAGCGTTTGTTTC  
AAGTTGATTTTCTACTGTTTATTAG  
TAACGTTCCGAGATGAGG  
CATCTCCATGAAGGTGAATAG  
GAGCCCTTCTATGAGCCTACCTGTTC

**FIG. 5B-2**

2	T6A13-sp6	T6A13-sp6	SSLP	NO
2	T13H18-t7	T13H18-t7	SSLP	NO
2	T13H18-sp6		SSLP	NO
2	T10J7-sp6	T10J7-t7	SSLP	NO
2	T17A11-t7		CAPS (Msp I)	NO
2	GPC6		SSLP	NO
2	m1398		CAPS (Mnl I)	NO
2	THY1B		CAPS (Rsa I)	NO
2	PhyB		CAPS (Xho I)	YES
2	nga1126		SSLP	YES
2	nga361		SSLP	YES
2	nga168		SSLP	YES
3	nga32		SSLP	YES
3	nga172		SSLP	YES
3	nga162		SSLP	YES
3	ARLim		CAPS (EcoR I)	YES
3	GAPA		SSLP	YES
3	GL1		CAPS (Taq I)	YES
3	atpox'	atpox	CAPS (Msp I)	NO
3	T25C10-sp6	T25C10-sp6	SSLP	NO
3	T27C7-sp6	T27C7-sp6	SSLP	NO
3	T9G9-sp6	T9G9-sp6	SSLP	NO

**FIG. 5C-1**

GTGCTCAGGGACTTCAC  
AAAGACTTGTAATTTGGGATTG  
AAACGATTGTTTTTCCCTGTAGTG  
GCAATGCTACCGCTCTGATAG  
ATGCTGCGATGTTTGTAAGG  
CTTCCATTTCTTGTATTAGTTC  
AACCGCTTCCCATTCGTCCTC  
AACCGCCATTTTCATTTCTATC

ATATTTTCGTCGATCGTGTTTG  
GGTAACAGCCTTCACCTCGTC  
TCTTTCCCTTAATCTATTTGTTGTG  
TCTCTGTGCTTTCTCTTTCCCTGAC  
TTGTTTTTCTAGGTTTGTGTAAG  
AGTCGATGTCTAGGCTCTTC  
ACTAAGGCCTGTGTTGATGTTTCTC  
GGCGACCTTGGACCTGTATACG

GTCTAAACCATCTTCACCAATAAT  
TTCTGTAGTTCTTTGTGAGTGC  
TATAACATCAAAAGCGGTCATCAG

TAGGGACATATCAAACCAAC  
ATGCCCTAACTATTCGCTGAC  
GGCATTAATTGGGAAGGTC

FIG. 5C-2

3	T14H20-t7	T14h20-t7	SSLP	NO
3	T7K14-sp6	T7K14-sp6	SSLP	NO
3	T21P20-sp6	T21P20-sp6	CAPS (Mse I)	NO
3	T20L24-t7		CAPS (Apo I)	NO
3	T5M14-sp6	T5M14-sp6	SSLP	NO
3	ASD.1	ASD.1	CAPS (Nla III)	NO
3	AtAo-2.2		CAPS (Dde I)	NO
3	91F1		CAPS (Fnu4H I)	NO
3	NIT		SSLP	YES
3	AFC1		CAPS (Pvu II)	YES
3	TSA		CAPS (Alu I)	YES
3	nga112		SSLP	YES
4	GA1		CAPS (BsaB I)	YES
4	mi233	mi233	SSLP	NO
4	T5L23.30k14	T5L23.1	SSLP	NO
4	T5L23.28k		CAPS (Rsa I)	NO
4	T5L23.32k		CAPS (Msp I)	NO
4	T5L23.50k	T5L23.3	CAPS (Alu I)	NO
4	T5L23.30k17		CAPS (Tsp509 I)	NO
4	T7M24.30k11		SSLP	NO
4	T25H8.30k9		SSLP	NO
4	T7M24.30k12		SSLP	NO

FIG. 5D-1



CGTTGACCCGAGAAGATTAC  
TGTCACATACACGGTTTCTCTTAG  
TAATACGGGACAATCTACAACAC  
AAGCATGTTACGTGGGATTG  
AATTAAAGGAATCAGAGAACTAC  
AAGGAAACACCACCAACGAAAC  
GAAACCCCTCTCCTCAAAC  
TTCGCTACATGGCCTTCTACCTTG

ACATCCGGCCTTCCCATTG  
AAACATGCTGCAGCTTGATTAG  
ATCATGGGGACGCTGCTTTTC  
ATGCGCAGAAGAGACGATGATAG  
CTTTGGCGGATGTAGGAGTAG  
TGTGGCAGGGTAATGGATG  
CCGCAGATGGATGTGATGAC  
TTCCCCCGAGGCGACTGAC  
GTGGCACGATCGTATGAGTTAGC

GCATTAAAGACAAAAGCCC  
TTCGGGAATCATGGTCTACAAG  
CAAGCTTCATGGGACTAG  
CTAATTGTAACGGAGAAGAGAG  
CAAATGATGTCTGGTCTATCTTC  
ATGATCAAGGGGACGAGG  
GAGACAGAGGATTTGGAAC  
CCCCTCCCGCCCTAAACCTAC

CGTATTCCTCCCTGAAAAGTGACCTG  
ATTCTTTTGCTTTATGGGACTTC  
AGGACGATGATACGCTTGTGGAG  
TTGGTTTTAAGGCTTTGGTGTAGG  
GTTTAAATTTTATGTATGTCTGTCTTC  
CGGACCTTAGCCTTGTGTG  
ATATCCGGCTCCGAACCTTGTGG  
TGAGGGGCTGACATTTCTTC  
TCGGTTGGGATAGAAAATGG

FIG. 5D-2

4	T7M24.30k13	T7M24.3	SSLP	NO
4	T25H8.30k8		SSLP	NO
4	T25H8.30k7		SSLP	NO
4	T24H24.30k3	T24H24.3	SSLP	NO
4	T27D20.C4	T27D20.4	CAPS (Dde I)	NO
4	mi306	mi306	CAPS (Tal I)	NO
4	nga12		SSLP	YES
4	T15D16-sp6	T15D16-t7	CAPS (Mse I)	NO
4	mi87	mi87	SSLP	NO
4	F14G16-t7	F14G16-t7	SSLP	NO
4	F13H14-t7	F13H14	SSLP	YES
4	mi167	mi167	SSLP	NO
4	T25J3-sp6		SSLP	NO
4	T3F12.0		CAPS (Bgl II)	NO
4	HY4		CPAS (Rsa I)	YES
4	nga8		SSLP	YES
4	nga1111		SSLP	YES
4	DET1		SSLP	YES
4	COP9		CAPS (Apo I)	YES
4	SC5		CAPS (Acc I)	YES
4	g4539		CAPS (Hind III)	YES
4	AG		CAPS (Xba I)	YES
4	nga1139		SSLP	YES
4	nga1107		SSLP	YES

**FIG. 5E-1**

CTCTCATCGACCCCTCACTCTCAAG	AGTCCCAACAAACCAAAACATAAAC
GGCCTCCATGCTACCAACAAC	CACAAAATGCCACCCCTACTACC
TGGCAGCAGAGTTATTGACGAG	ATGCGGACTGAAGGACACC
GGCCTGCCCATAAACCTG	CCGCTGTGGAACCTGAAAG
AAACGCCGCCAAAATCAGAAC	ACAACCTTAGCCCCGATCCATTTC
CTGCGAGCGACGGTCAATG	GCAGCCGTGTGGATGGAG
AATCAATTGGTTTCTACTTTTTAG	AAC TCCGACTGAAGGTATAGC
TTTGCAACCGCCTATGTTACC	GAGGACGTTTTCAGAGTG
TCGACTAGATTATATTCTCTCAG	TTTGGCTTGACTCTGTGAAC
CCCAATTCCCTTGCCACTAAG	AAGAAAGAGAGGAGGAAGAAGATGTC
AGTGGACGCCCTTCTTCAATGTG	TGGTCCGTCGTAGGGCAAC
CTTCACGCTGCCCTTCACTCTC	GATACGCTCGTTCCCACTCG
CAAAACCAAAATCCGCGAAGAAC	AGTGGCCAGCCCTTCTTAACATACC

FIG. 5E-2

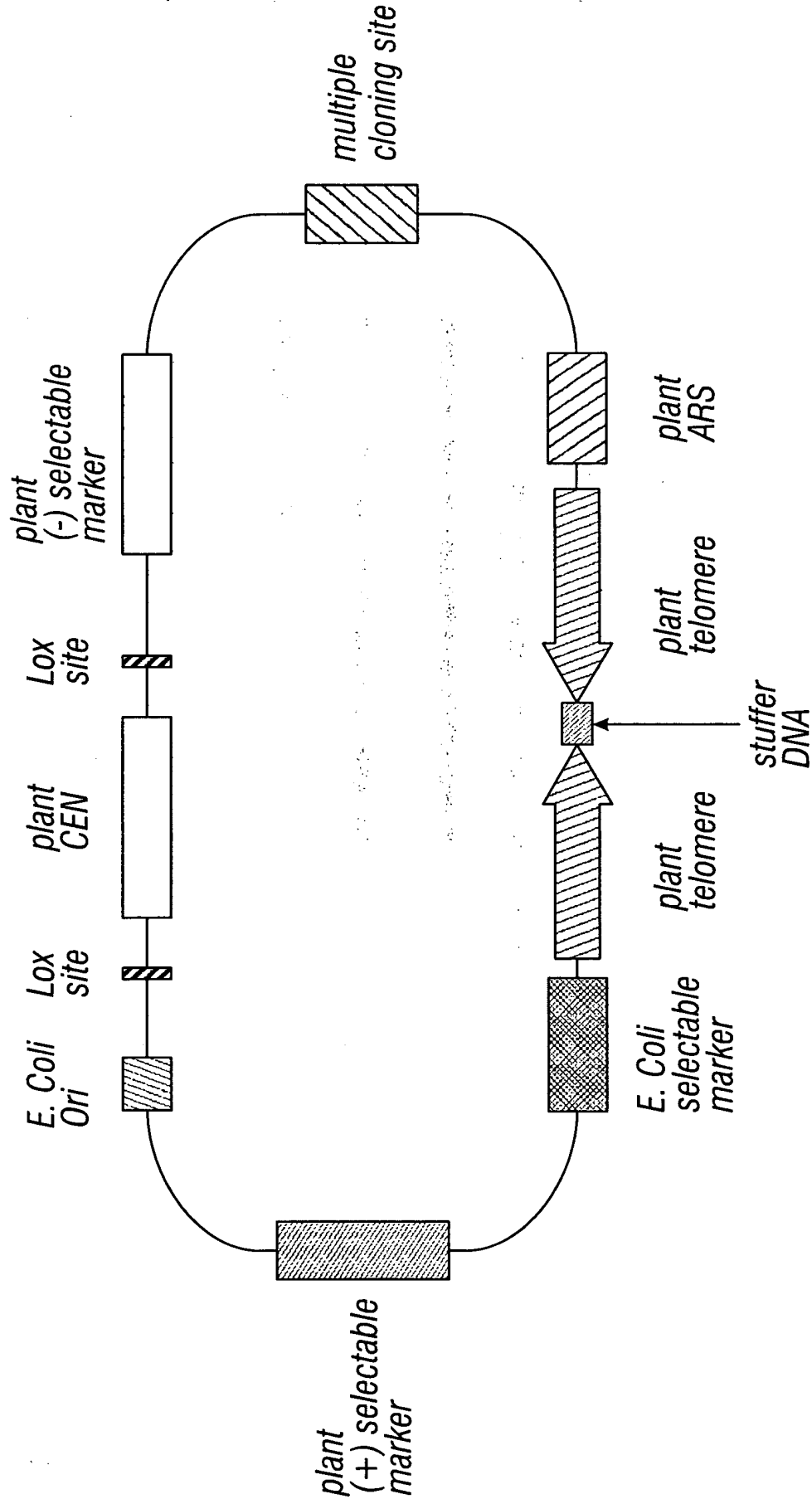
5	CTR1			SSLP	YES
5	ca72			SSLP	YES
5	nga106			SSLP	YES
5	nga139			SSLP	YES
5	SO262			SSLP	YES
5	nga76			SSLP	YES
5	F13K20-t7	F13K20-t7		CAPS (Mse I)	NO
5	T18M4-t7			CAPS (Sch I)	NO
5	T18F2-sp6	T18F2-sp6		CAPS (Mse I)	NO
5	T24120-sp6	T24120-sp6		SSLP	NO
5	CUE1	CUE1		CAPS (Mse I)	NO
5	T22J22-sp6			SSLP	NO
5	T17M11-sp6	T17M11-sp6		SSLP	NO
5	T14O24-sp6	T14O24-sp6		CAPS (Tsp509 I)	NO
5	F18G23	F18G23-t7		SSLP	NO
5	T2L5.3K	T2L5.3		CAPS (Fnu4H I)	NO
5	F7N22.3k1			CAPS (Bfa I)	NO
5	T3L6-sp6	T3L6-sp6		CAPS (Mnl I)	NO
5	T21K16-t7			SSLP	NO
5	phyc			SSLP	YES
5	SO191			SSLP	YES
5	DFR				YES
5	LFY				YES

FIG. 5F-1

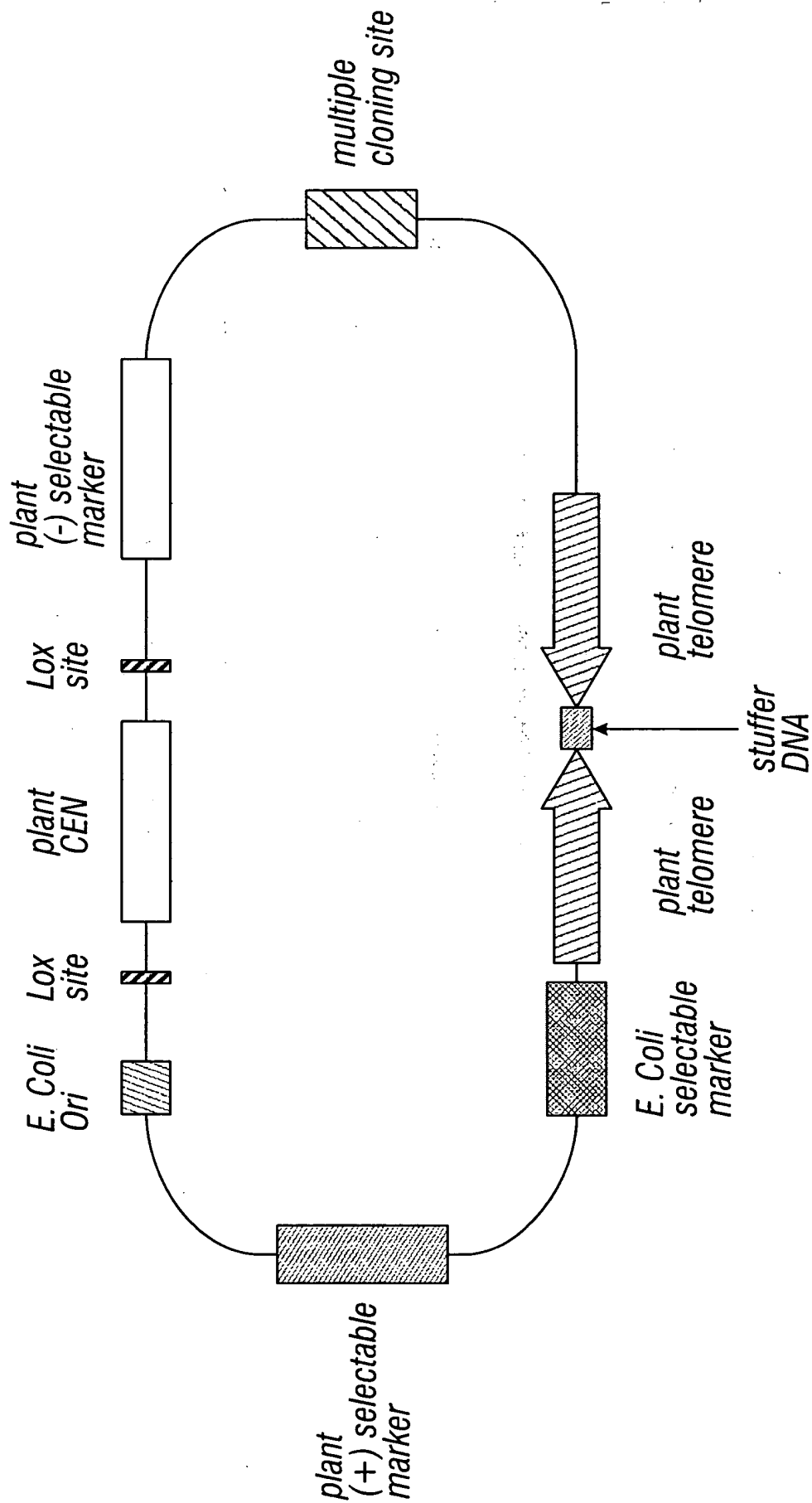
```
TTTGTGCAATTTATTAGGGTAG  
CCGTGGTCGAGAGTTGAGTTAGTC  
AGCTTCGATAACAACATCACC  
AACGCTTATCCTCTTTCTCTTTTAC  
TCTCGTTCTGATGGCTCCTGTG  
CGACGAAGCAGTGGAGGAAC  
AGCTACTACCCGAATGTGAATC  
TAGGACGCAATCAGAGAAG  
TTGGGCTGGCGTGGAATC  
GCTGCGAAGGCTGATGAAG  
CACCGACGTTATCTGGGAAAG  
GAGCGTGCTTTTGGAGTTTTC  
GACTCATATGTGGCGTTTTC  
  
ATTTGCAGAAAGTTGAAGTTGGTC  
ACCCGGAGTAGTTTTTTCAGTGTTTC  
AGAAGATAAATCAACTAAACAAAATG  
ACGGTTGCCCATCTTATCAGTG  
GTGTAACCCGGTGATACTCTCGCC  
GCGAGAAACGTGAAGAGATAG  
TTGGTGTGTTAAGAAAGAGTGG  
CTAATCATGTGTCTTTAGGCTATC  
AGGCGAGAAAGCGTCAGG  
TCGCCGGGAAACACAGTAAC  
AAAAGTTAGGTAGTAGGAAAGAAAG  
AACCCTAGATCGCCCTTTTTC  
AGGATTCACCTGGCGGTTC
```

FIG. 5F-2





**FIG. 7A**



**FIG. 7B**



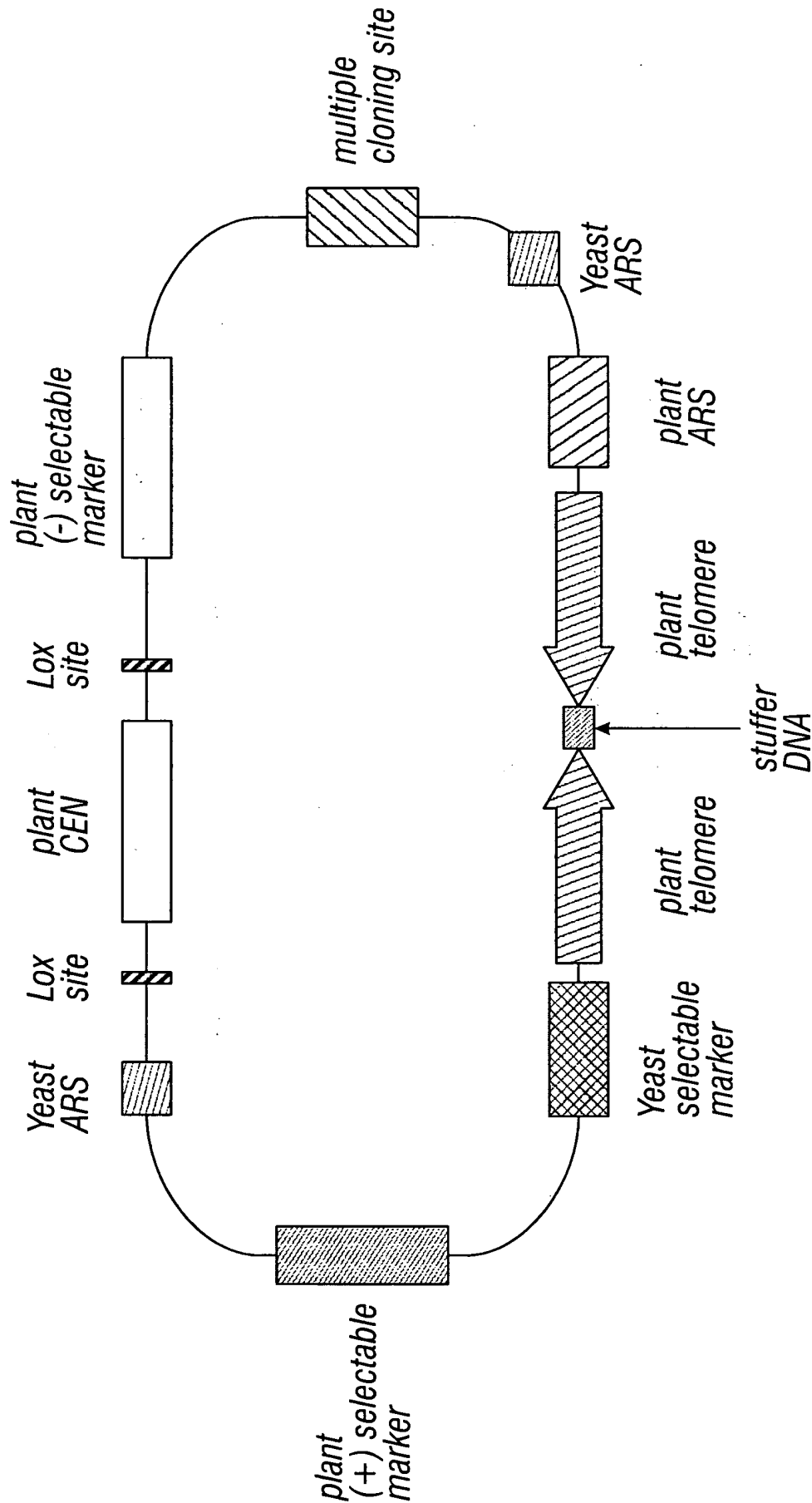


FIG. 7C

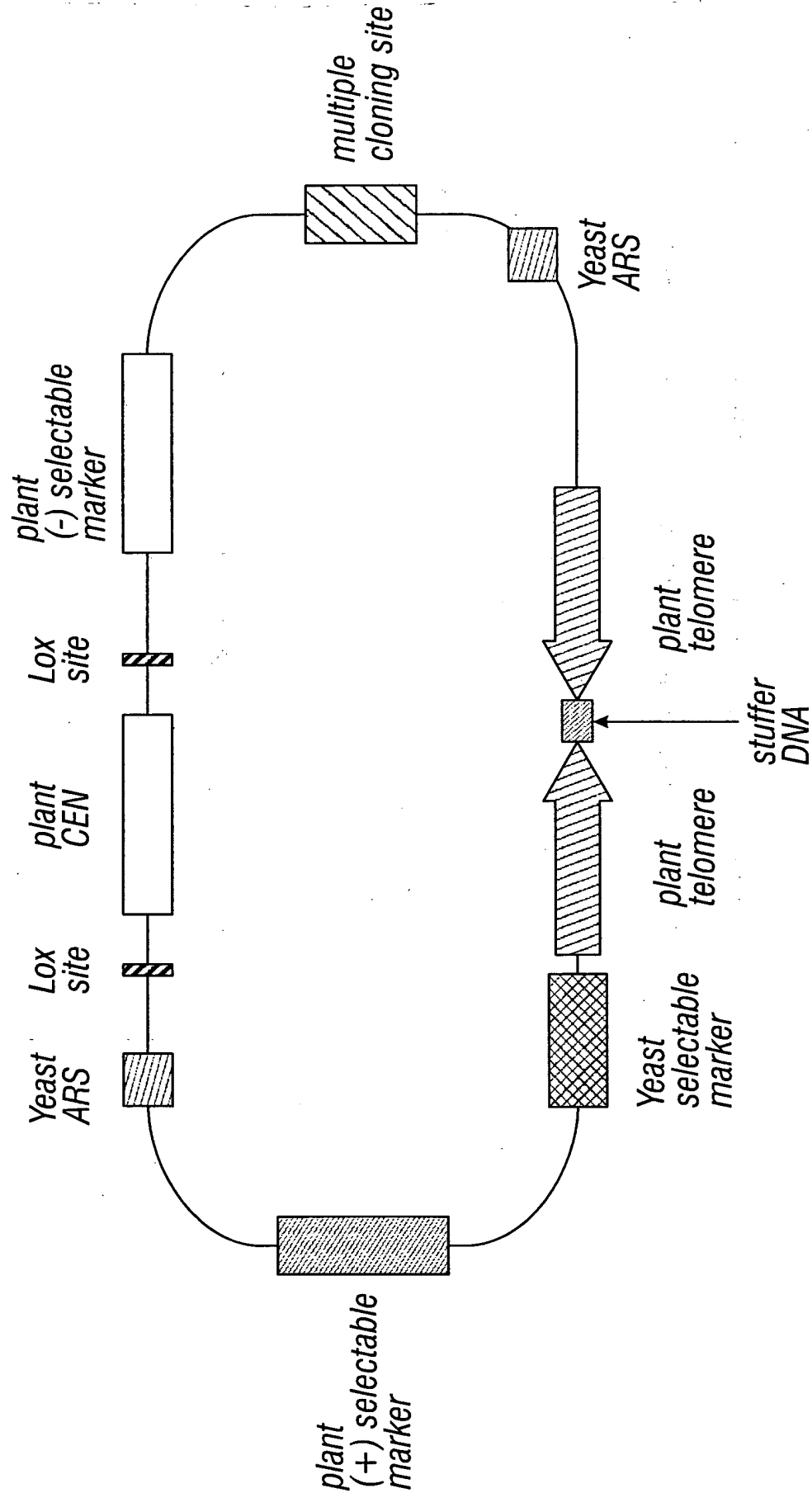


FIG. 7D

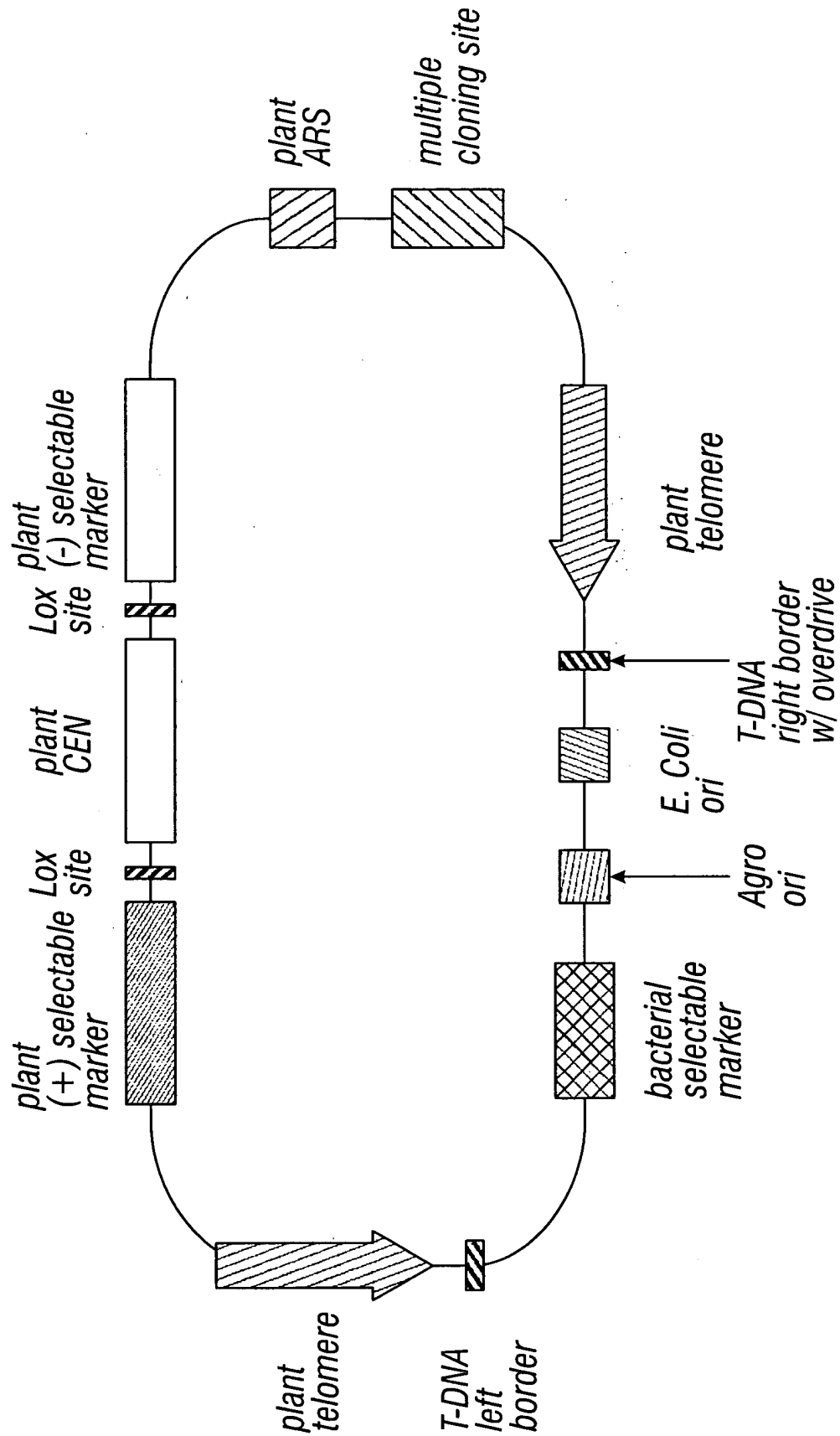


FIG. 7E

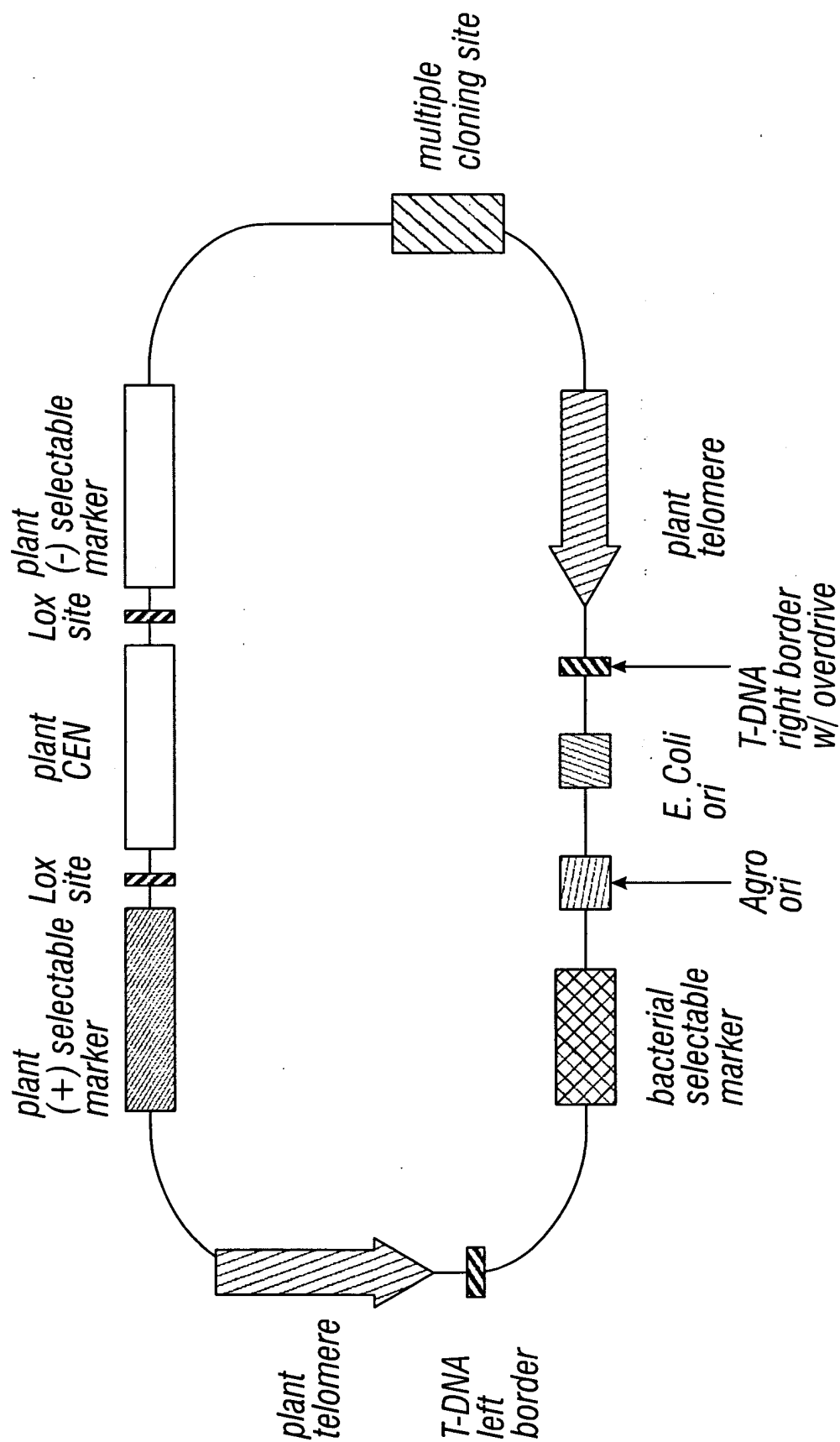


FIG. 7F

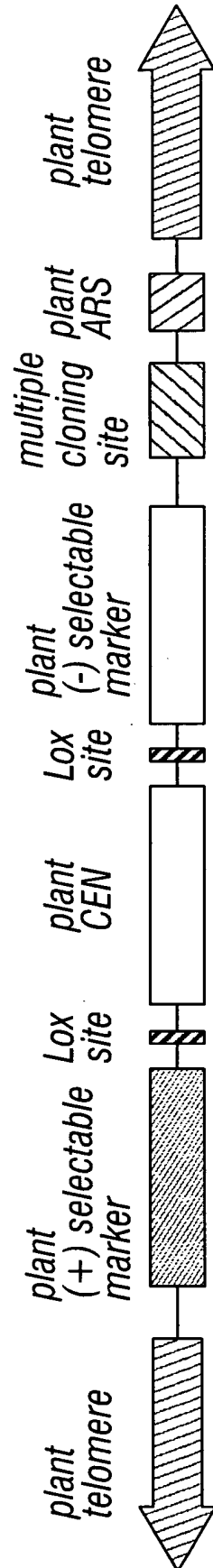


FIG. 7G

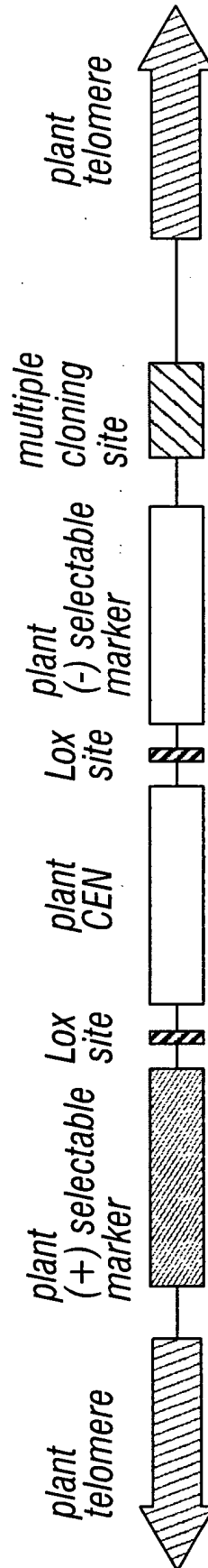


FIG. 7H

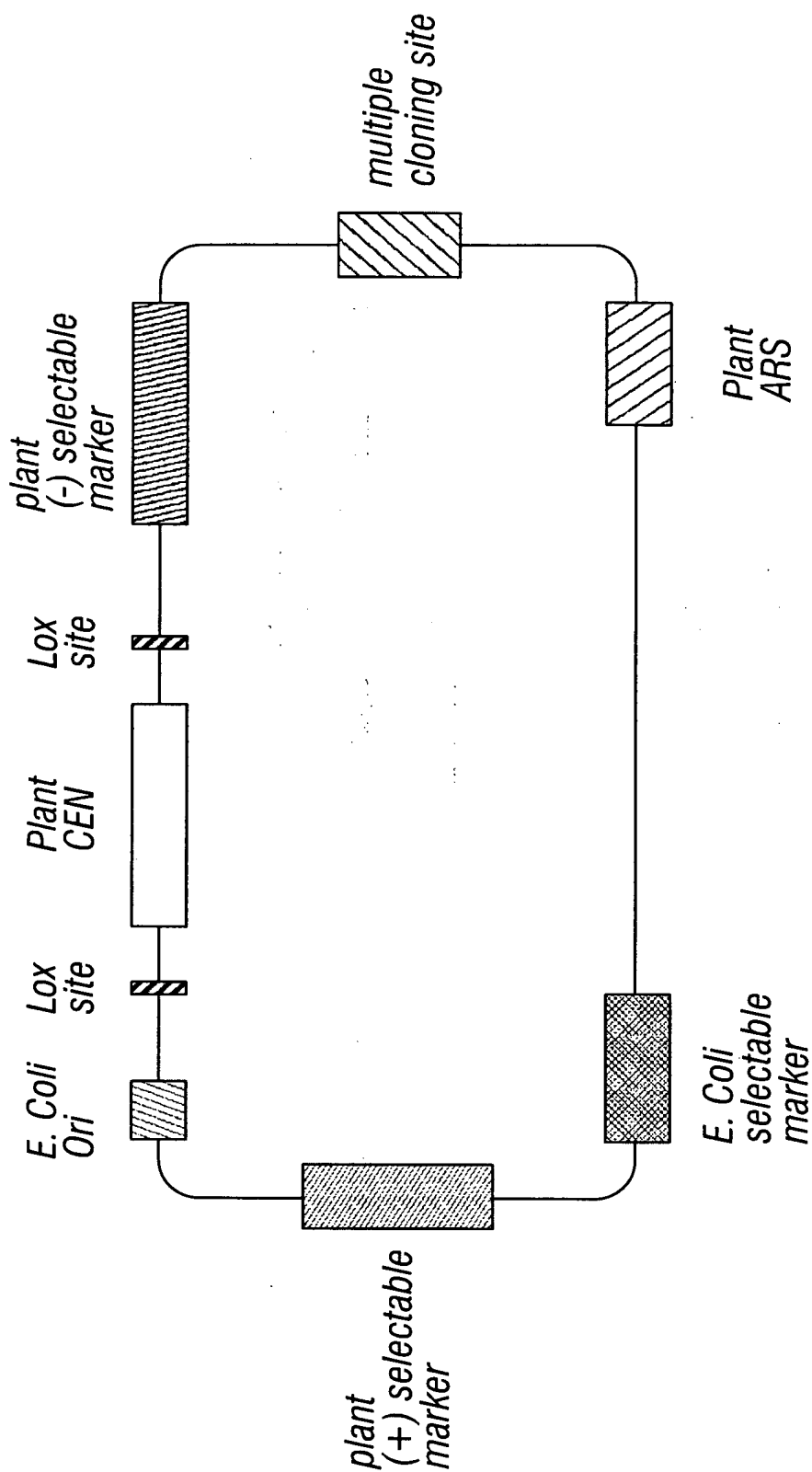


FIG. 7I

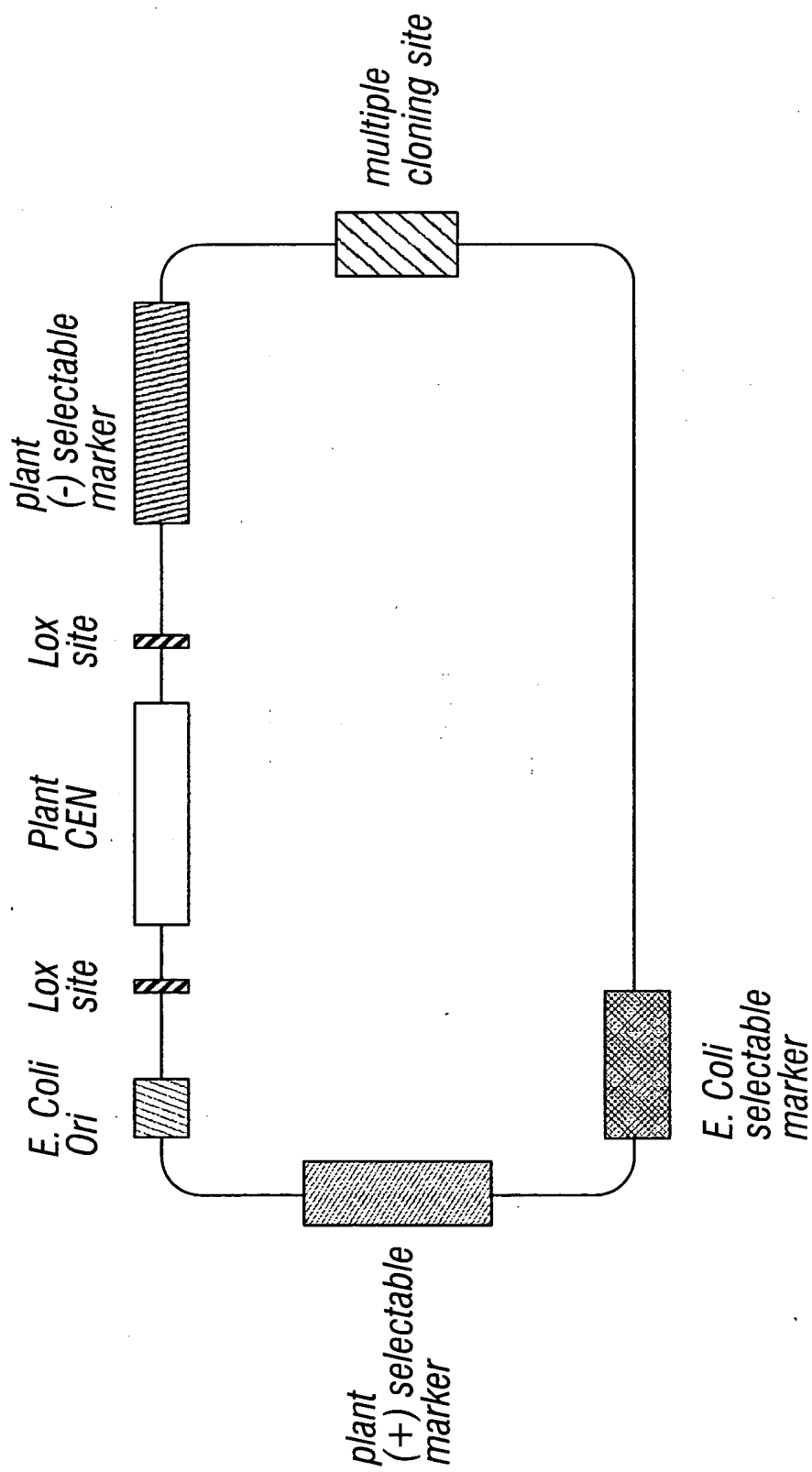


FIG. 7J

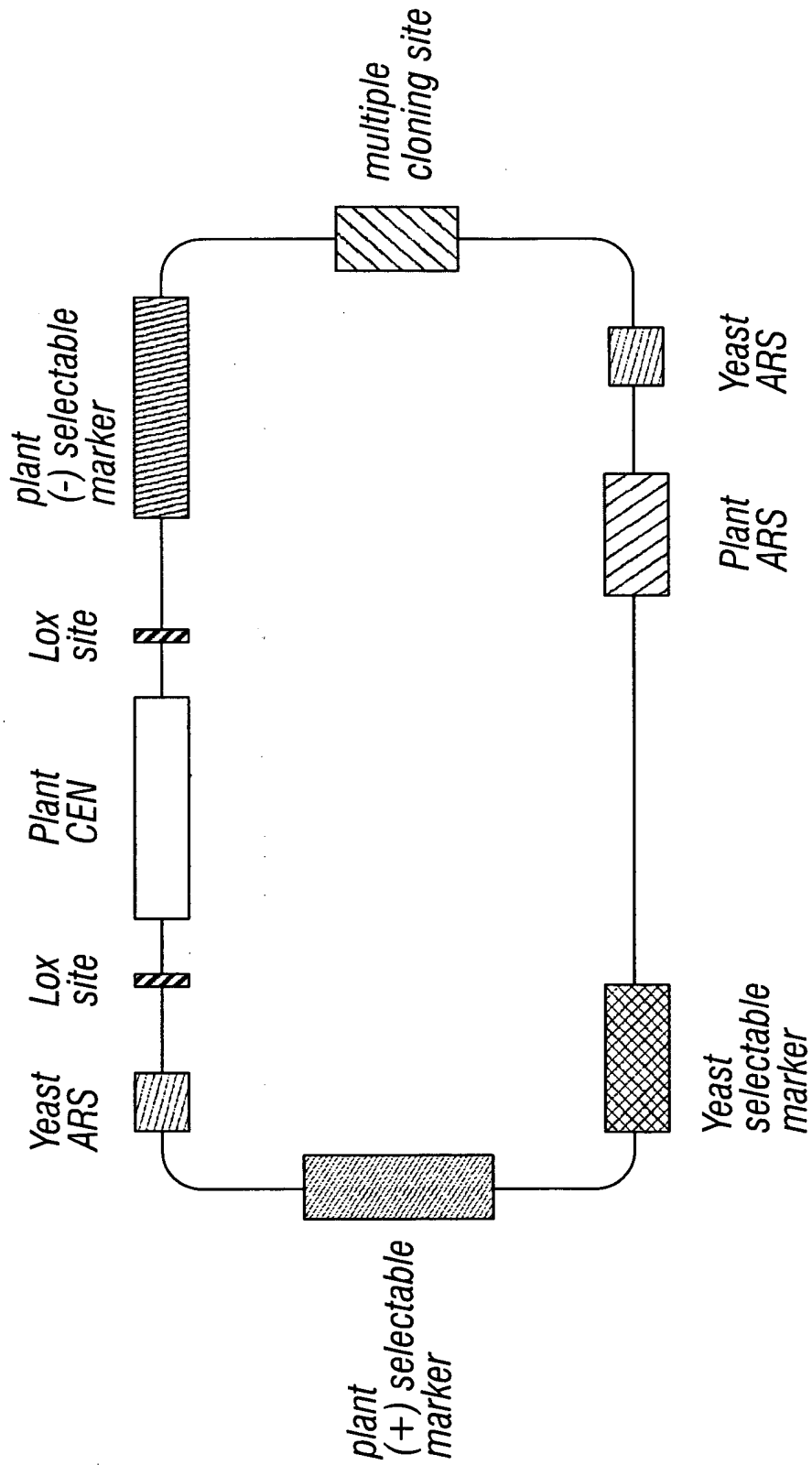
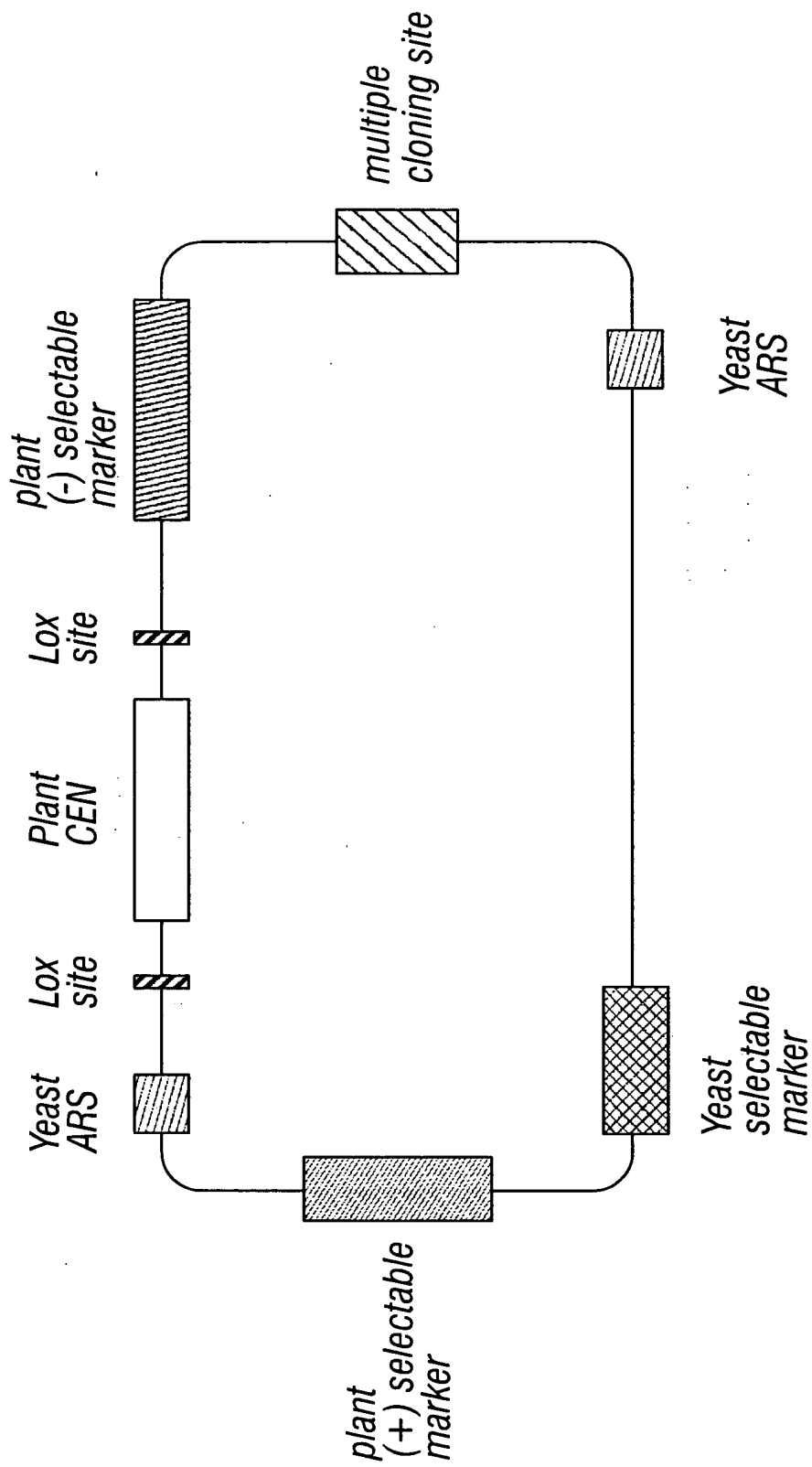


FIG. 7K





**FIG. 7L**

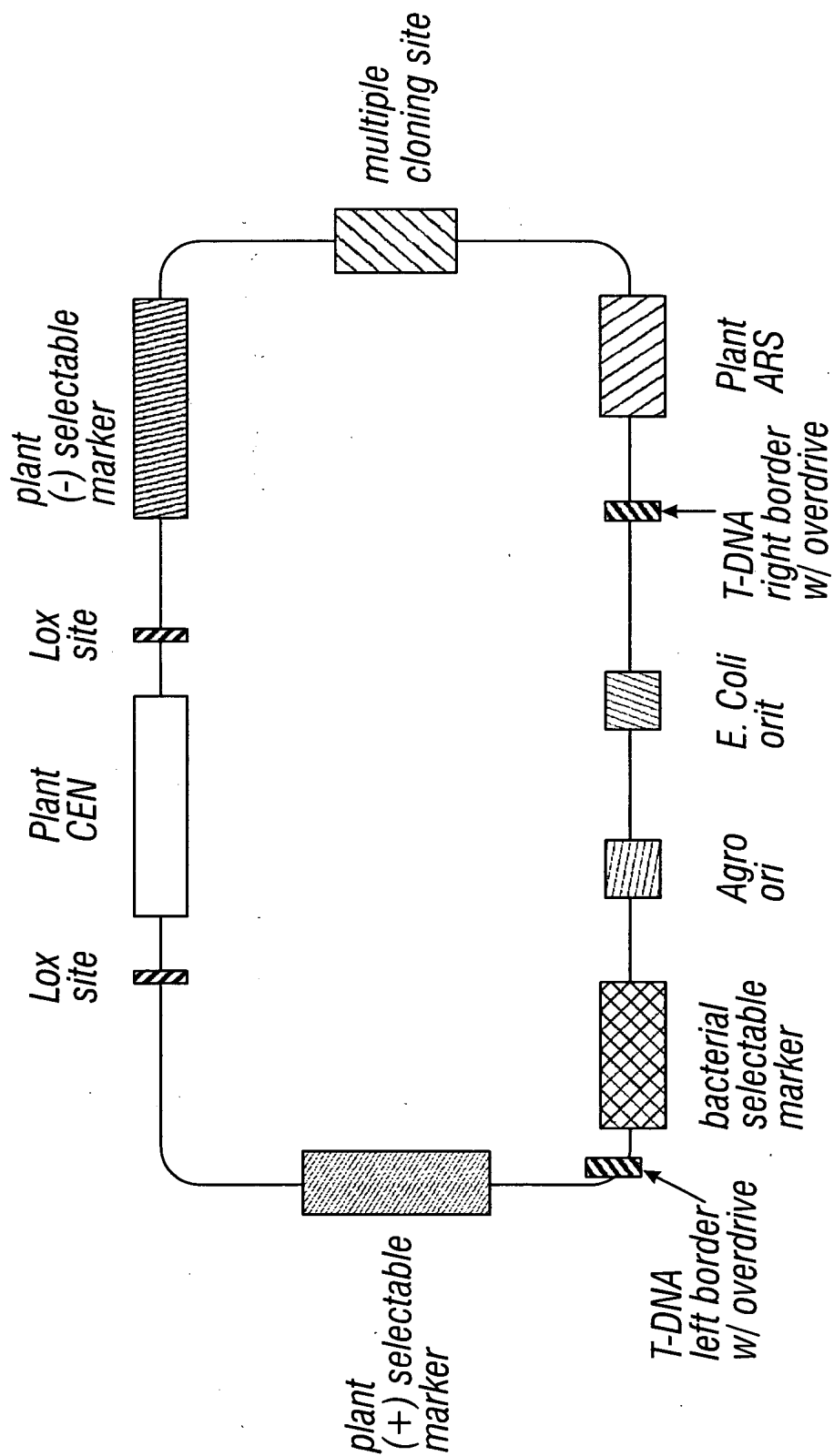


FIG. 7M

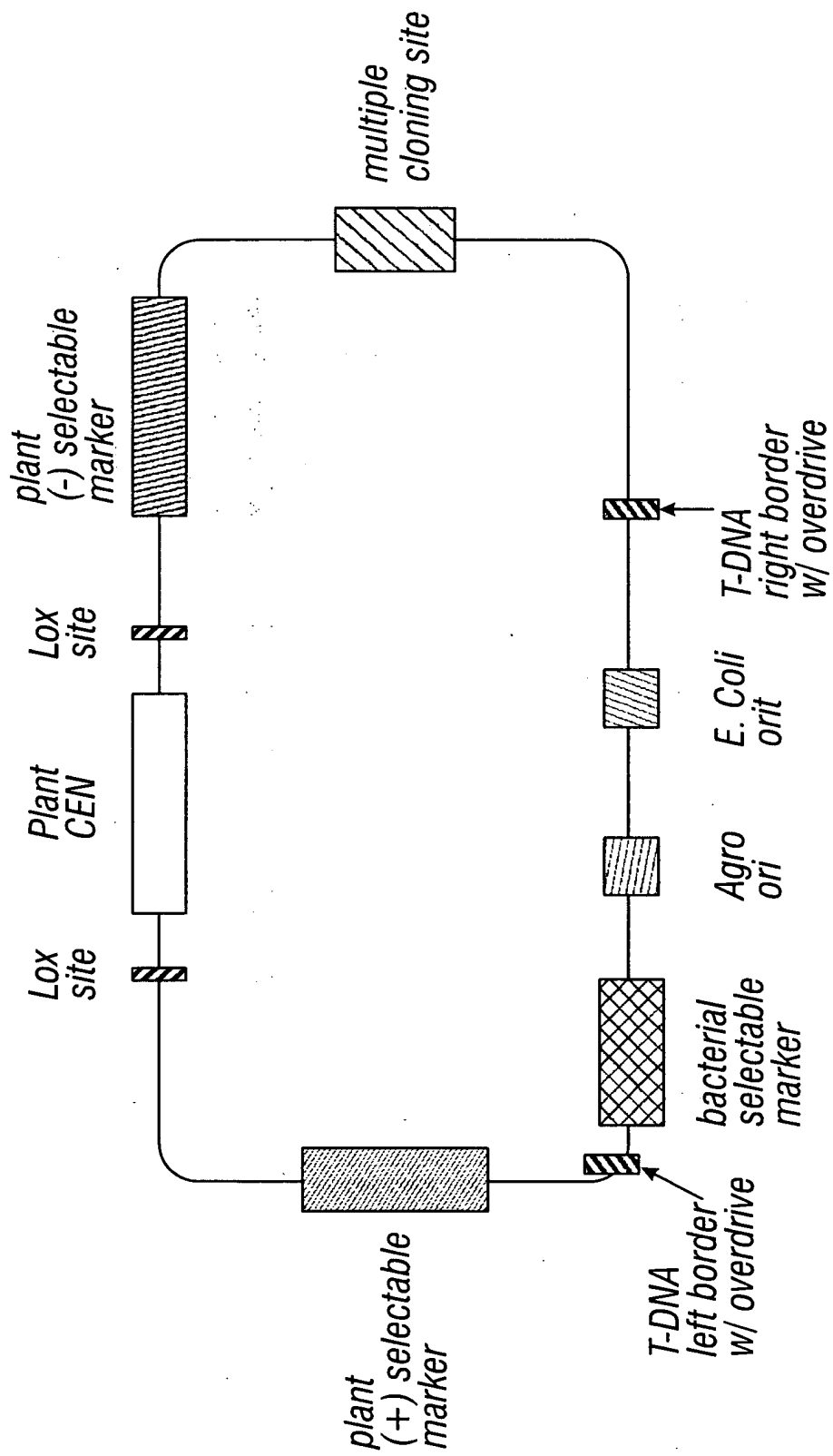


FIG. 7N

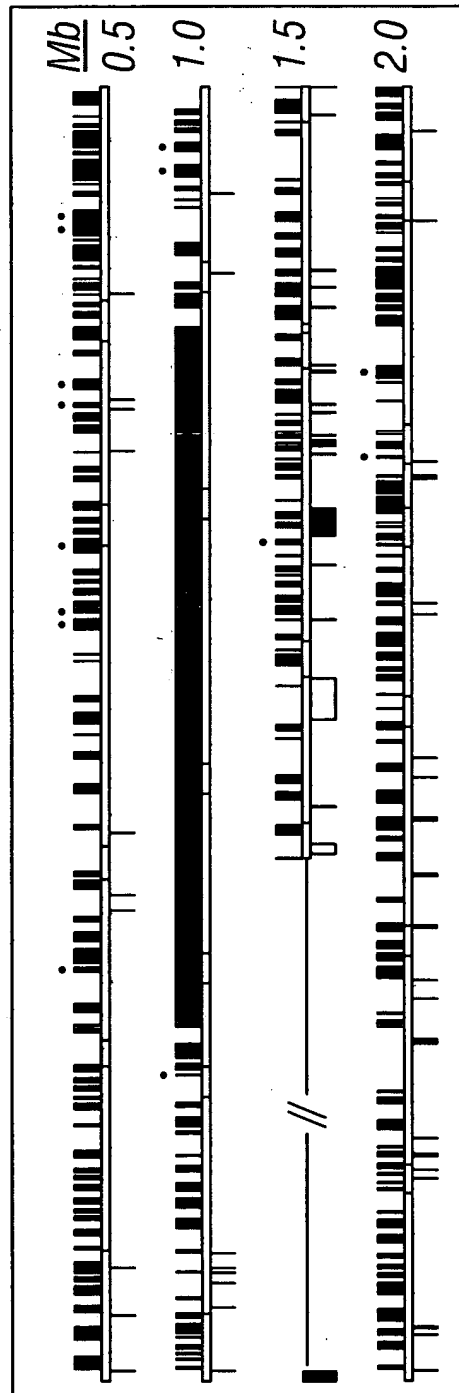


FIG. 8A

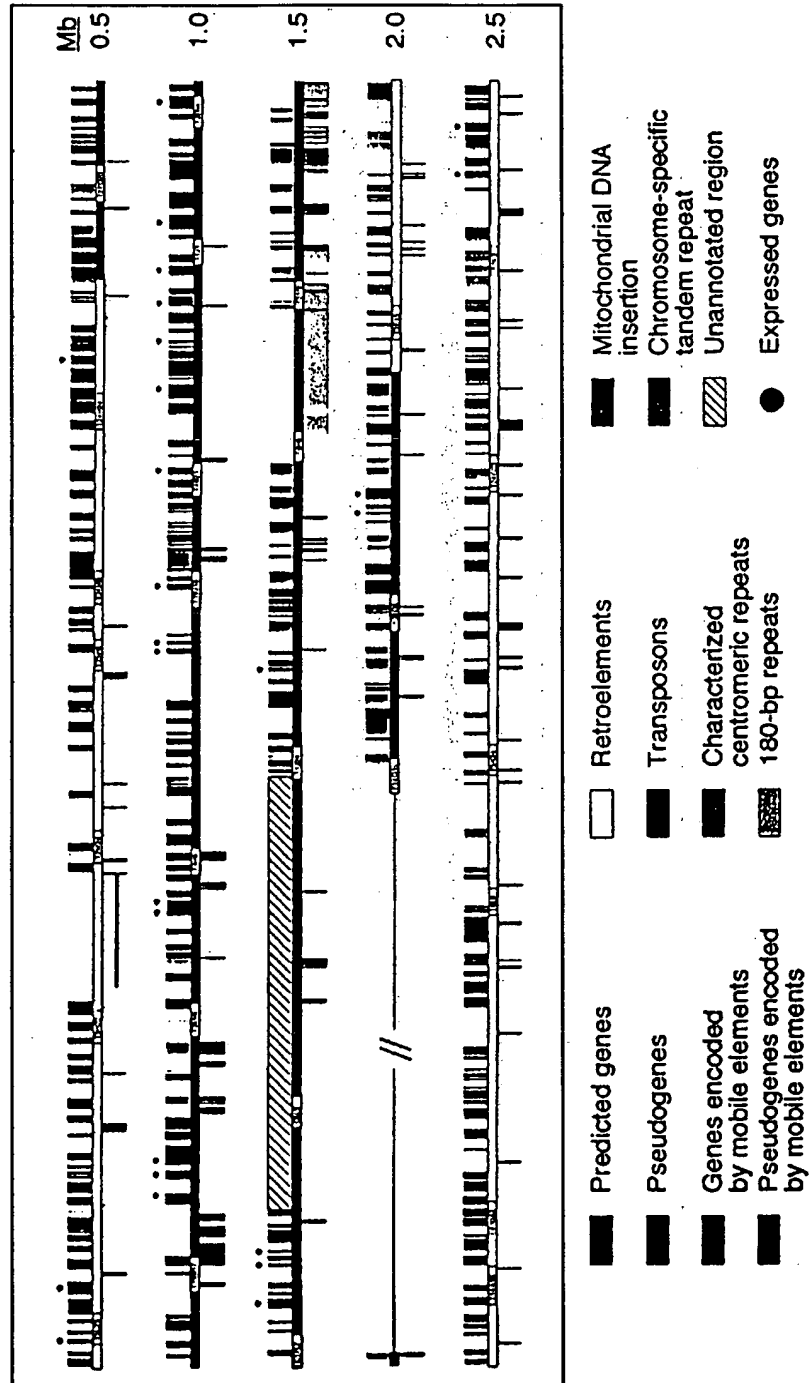
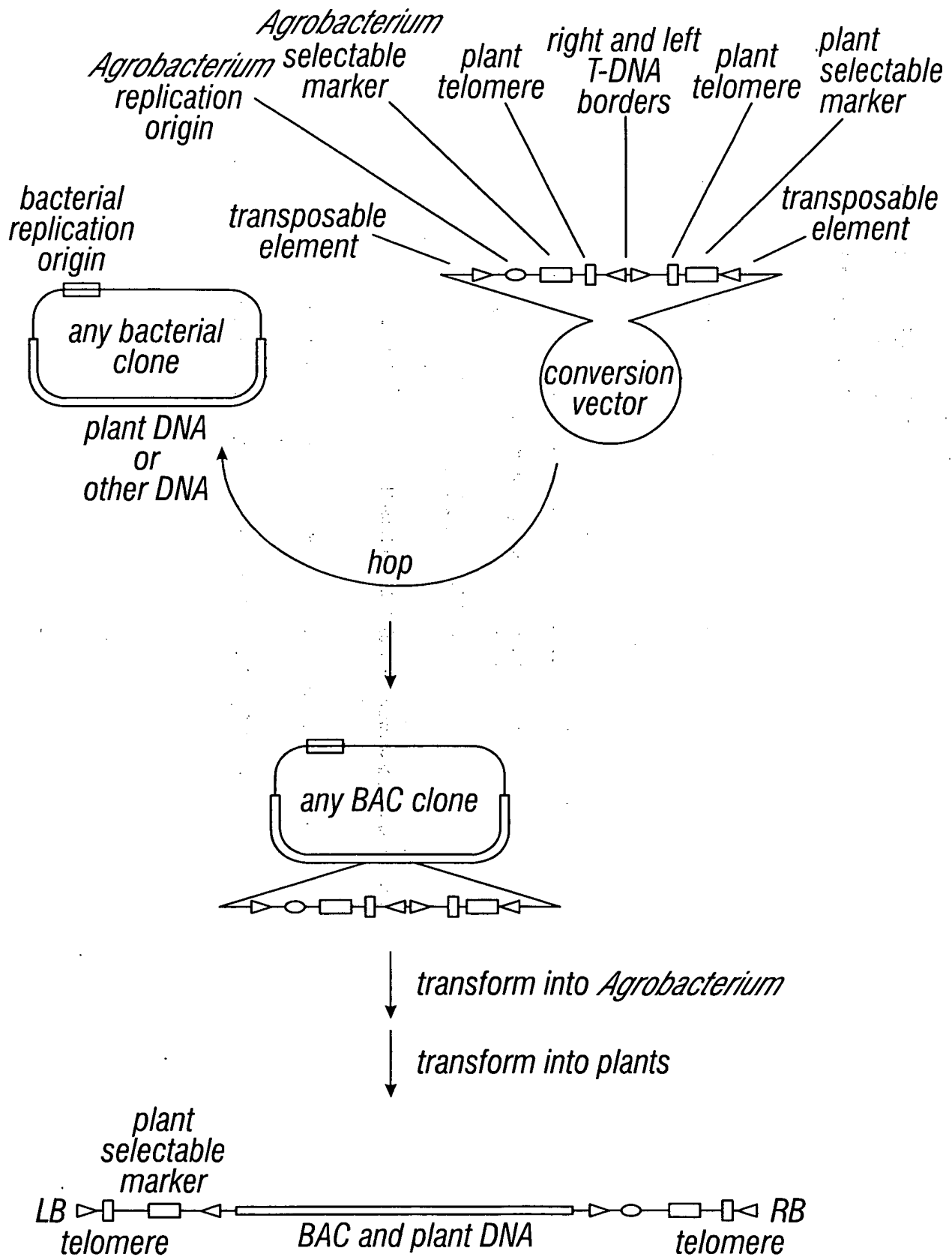
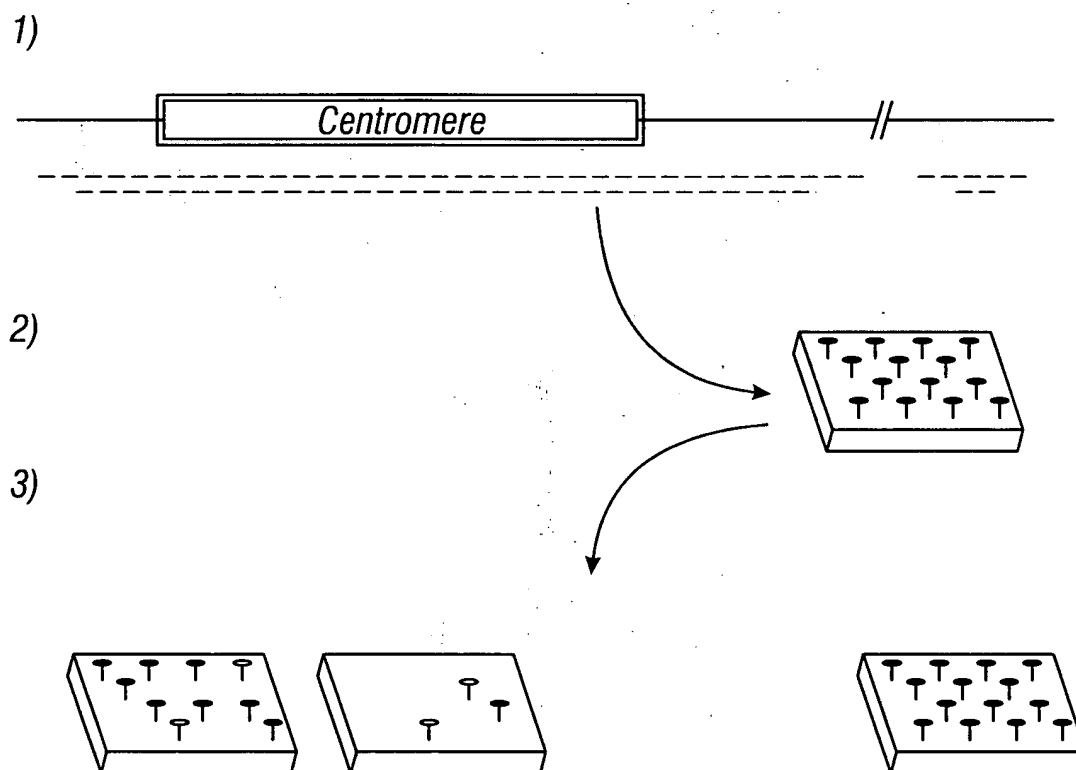


FIG. 8B



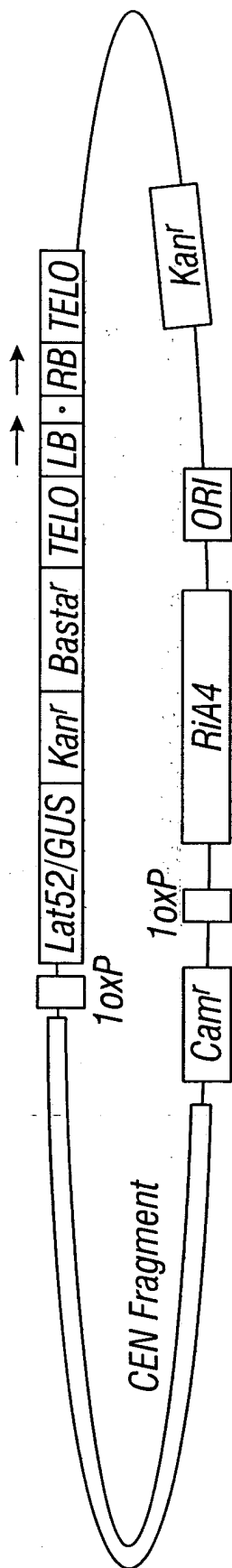
**FIG. 9**



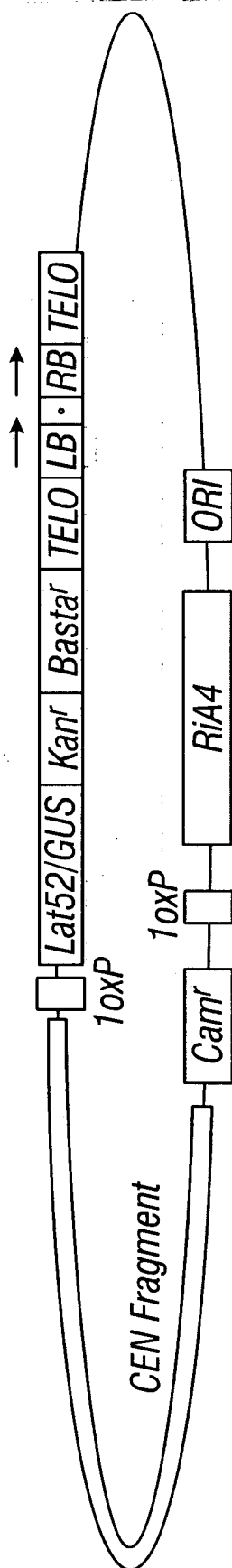
**FIG. 10**







**FIG. 11B**



**FIG. 11C**

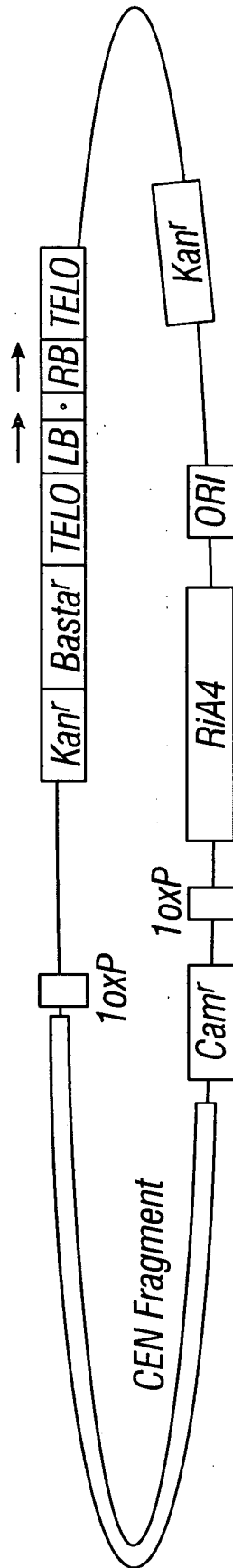


FIG. 11D

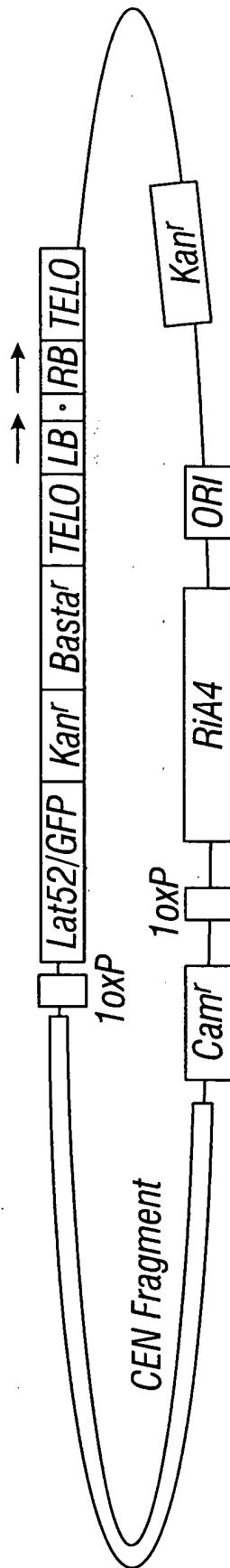
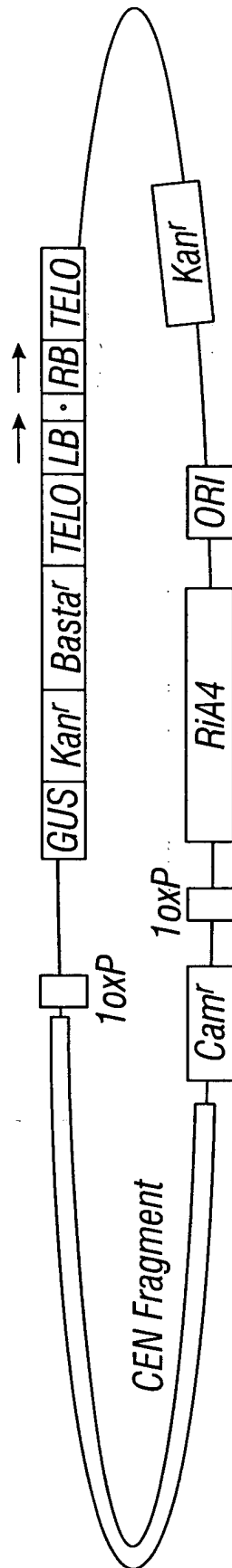
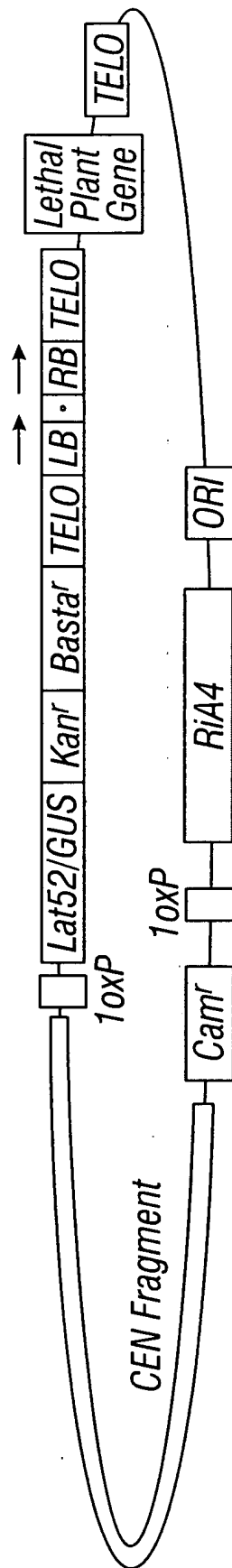


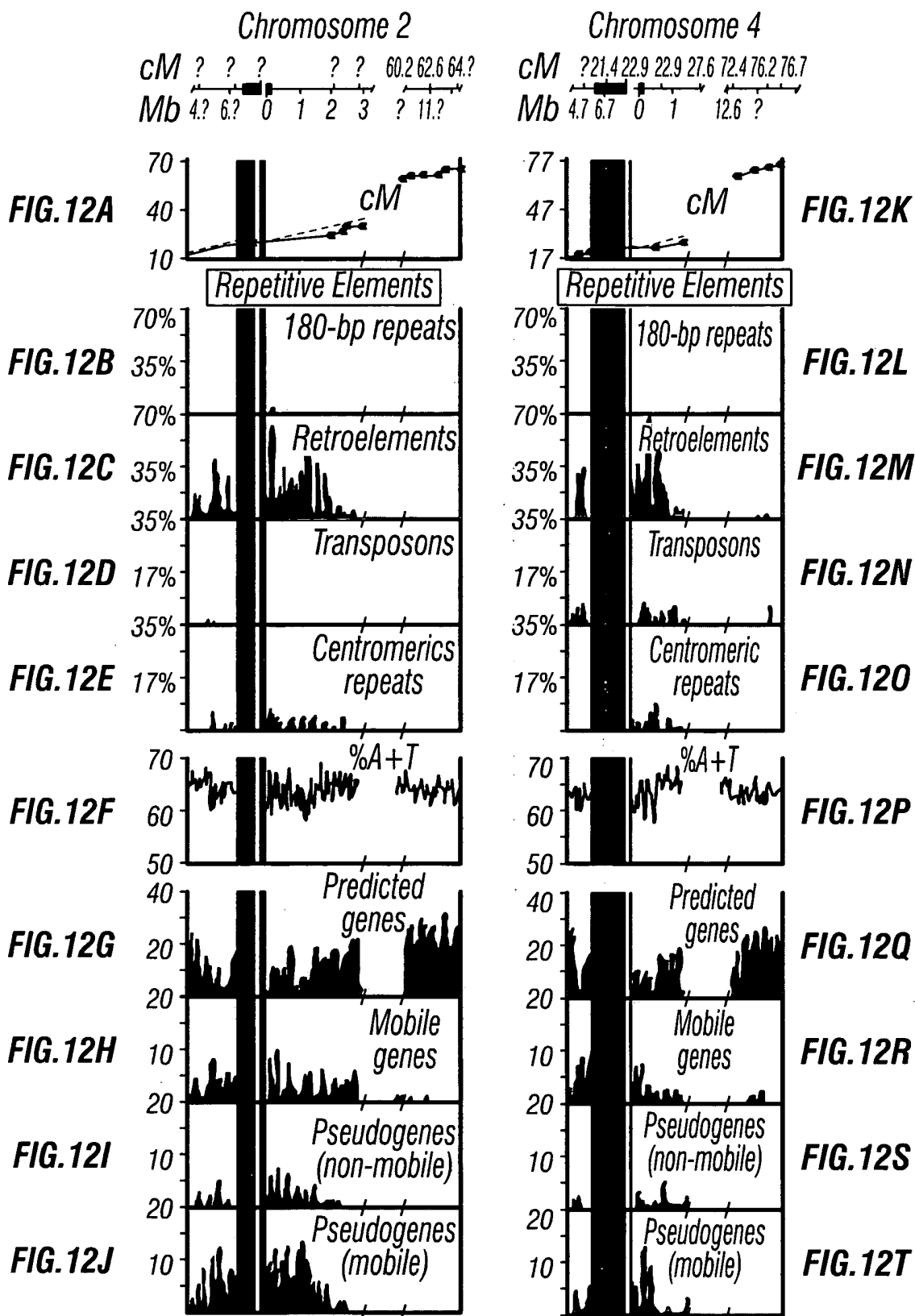
FIG. 11E

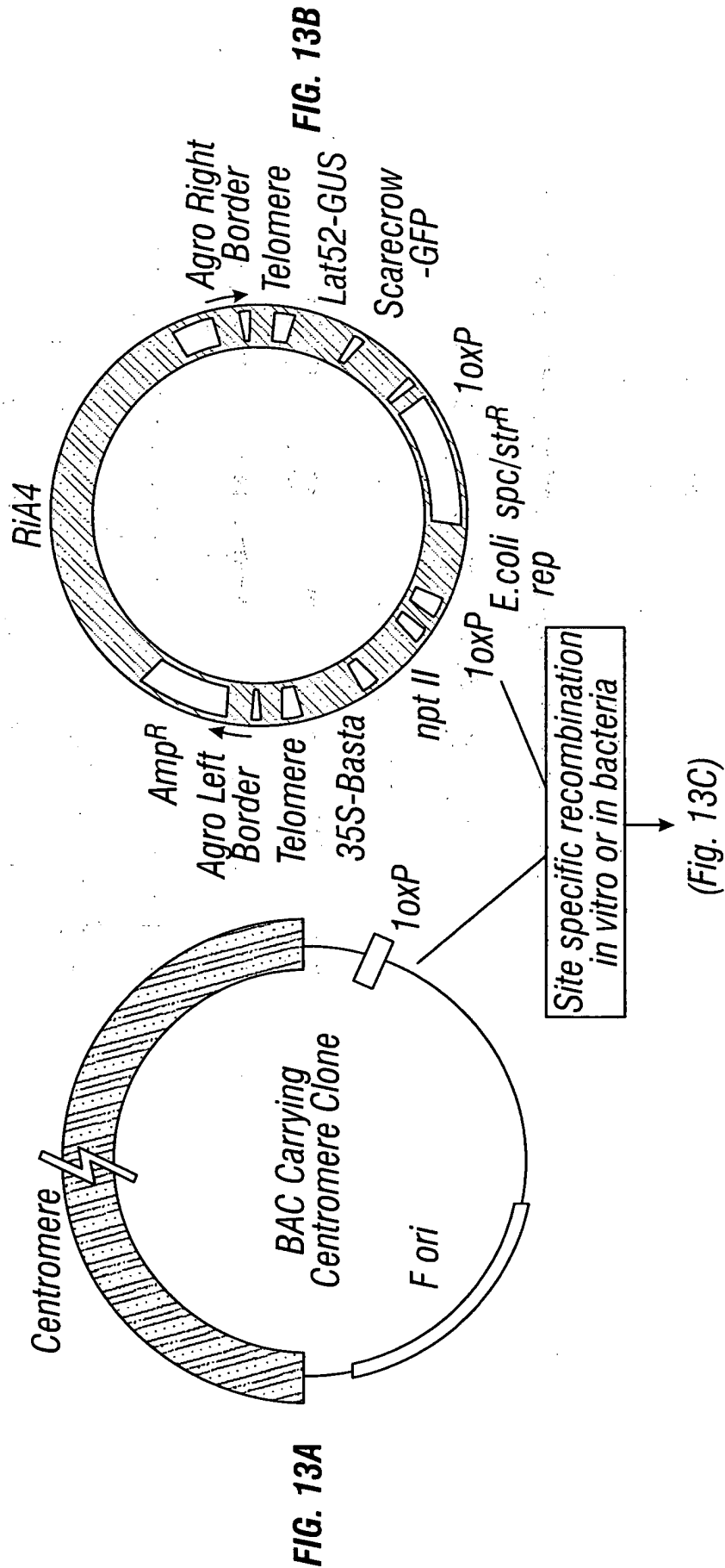


**FIG. 11F**



**FIG. 11G**







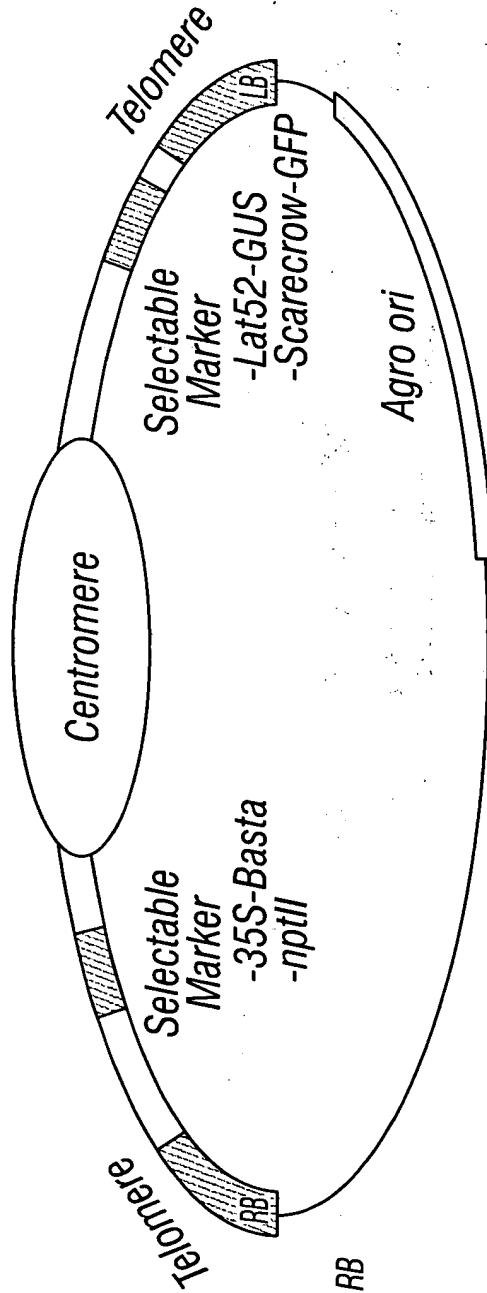


FIG. 13C

Transform constructs into plants  
 using Agrobacterium or other  
 transformation protocols

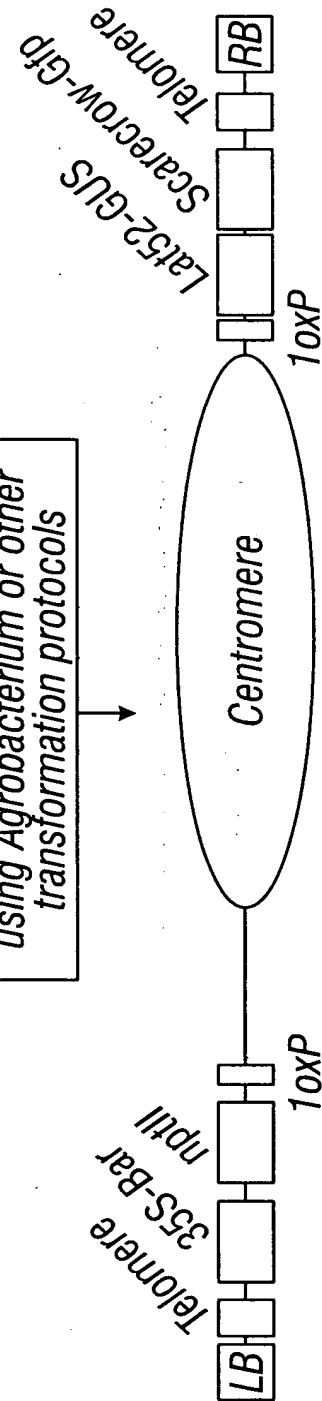


FIG. 13D

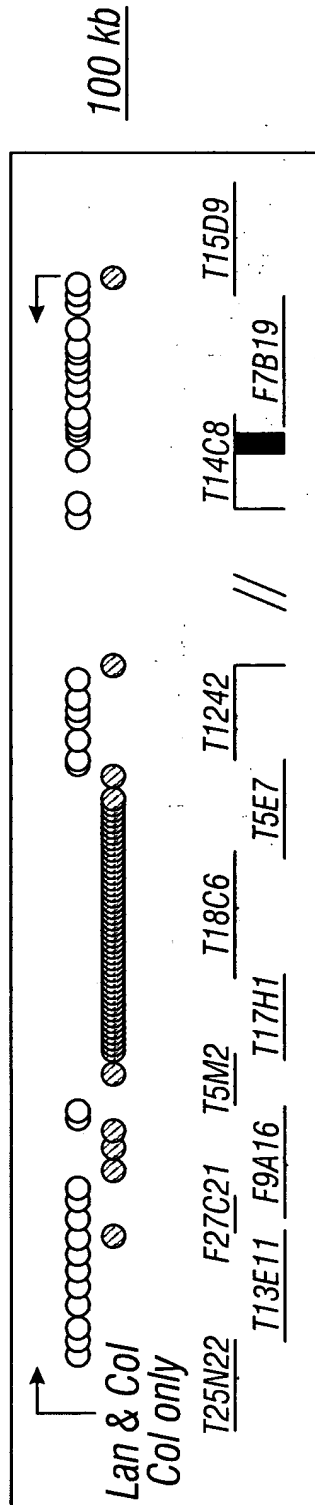


FIG. 14A

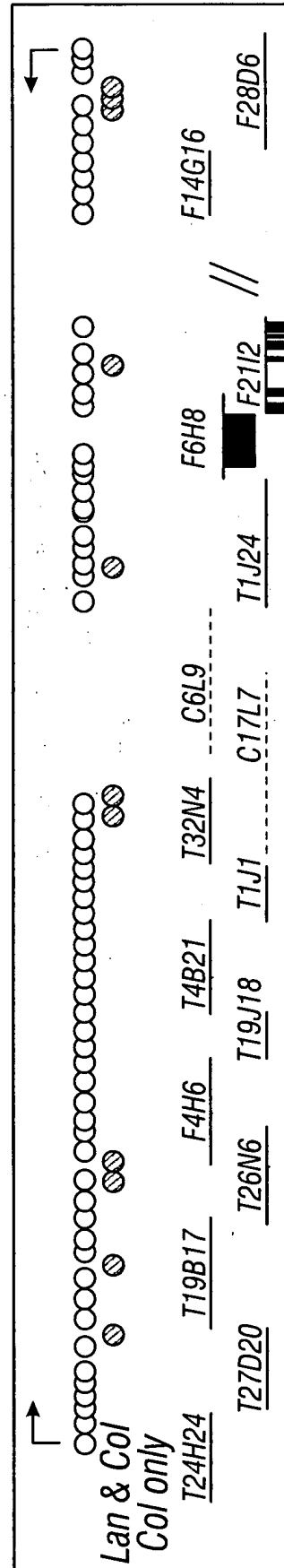


FIG. 14B

Sequenced Clone	Marker name	Marker or Primer pair	Marker Location	marker properties, position
T13E11	T13E11.01	primer	1755-2385	Lan & Col
T13E11	T13E11.30	primer	30628-31270	Lan & Col
T13E11	T13E11.48	primer	48187-48969	Lan & Col
T13E11	T13E11.63	primer	63886-64530	Lan & Col
T13E11	T13E11.78	primer	78190-78878	Lan & Col
T13E11	T13E11.93	primer	93907-94579	Lan & Col
F27C21	F27C21.18	primer	18383-19057	Lan & Col
F27C21	F27C21.02	primer	2570-3293	Lan & Col
F9A16	F9A16.71	primer	71978-72592	Lan & Col
F9A16	F9A16.53	primer	53253-53921	Dom
F9A16	F9A16.38	primer	37116-37733	Dom
F9A16	F9A16.22	primer	22166-22889	Dom
F9A16	F9A16.03	primer	3308-4091	Lan & Col
T5M2	mito border	marker	17685	Dom
T5E7	T5E7.23	primer	109092-109688	Lan & Col
T5E7	T5E7.73	primer	73460-74120	Lan & Col
T5E7	T5E7.58	primer	57942-58583	Lan & Col
T5E7	T5E7.40	primer	40913-41537	Lan & Col
T5E7	mito border	marker	13507	Dom
T5E7	T5E7.02	primer	2919-3585	Lan & Col

**FIG. 15A-1A**

Forward Primer

AGCGCTGGGATGGGTTGGTTG  
CAGGTTGCGGTTACTACATGGGTTTCAG  
AACCCCGTAAATTAAACACAC  
ACGGCGGTTGAGAGGAGAAAG  
AACAAACAAATGCCAGGTCAGG  
GTACCCCGGTCCTGAGATTGAG  
CAGGCGATTGTCCTTTATAGGCTGTAAG  
ACAAAAGCCGAACTCGTGGAAG  
AATGCTTTTGGCACTCTTTTGAC  
CGCAGCGGCTACTTGTTG  
CAAGGCGGAAACAACCTC  
GTATTTAGCATTATGTTAGTCTGTAGTGG  
GATCCAGCAACCTTAGCCTCCTTC  
AAGGCATCAACGTTTGTGTG  
ATTATTGGCTGCTGCACCTCTGTCAC  
TCTCGGAGTAGGGGCTTTGTTCTG  
AGGGGGCTTACAAGAAATGAAC  
GTAGCCGGCTCAGTCTCATACATC  
CGAATTCCCTTCAGATGATGC  
AAATGGCAGAAGCAGAAGCAGGAATAG

Reverse Primer

TTAATGCGGCAATGGCTGAACAAG  
TATGCATGCGAGTTGGTGGAGGTAAAG  
CGATACGGCATGACTCCAG  
CCCCAAACGCAGCAAGACAATC  
CTCCGGTCGCAAGTTACATACAG  
TTGGGAGCAGGATTGATGTG  
TTTGTCTGGAACGGAGGGAGTAC  
TGCCCTGGTTGATTATTGCTGAAAG  
TTGTTATTTTGGGTTTGGGTTGG  
GATGAATTGATCCGTTGTTTATGTCT  
AATTATTTTCAACGGCTCTTTACC  
GTCCTTGCGTATTCTTCACC  
GATCCCTCAGTTCGAAATCAATCTTC  
CTACCAGGTAGGTGAAACG  
AGGCCGGAGCTCGTATGGA  
CGGTCGCCCTCGTTCTGTATCTG  
TCGCCAATGAAAGAGGGTAG  
CTAAATCCCGAAAACCCCAACCCAC  
TTGCCCTTACCTATACCCCGAC  
TAATGCAAGGGTCTCGTAATGGAAATG

**FIG. 15A-2A**

T12J2	T12J2.01	primer	1373-1998	Lan & Col
T12J2	T12J2.19	primer	19369-20038	Lan & Col
T12J2	T12J2.37	primer	37750-38359	Lan & Col
T12J2	ATEDA59	marker	50592	Lan & Col
T12J2	T12J2.56	primer	56455-57533	Lan & Col
T12J2	T12J2.73	primer	73911-74556	Lan & Col
T14C8	T14C8.1	primer	8862-9544	Lan & Col
T14C8	T14C8.6	primer	10837-11485	Lan & Col
T14C8	T14C8.7	primer	45334-46016	Lan & Col
T14C8	T14C8.3	primer	46672-47283	Lan & Col
T14C8	T14C8.8	primer	48833-49538	Lan & Col
T14C8	T14C8.9	primer	71115-71878	Lan & Col
T14C8	T14C8.5	primer	73841-74456	Lan & Col
T14C8	T14C8.4	primer	75442-76122	Lan & Col
F7B19	F7B19.1	primer	108-757	Lan & Col
F7B19	F7B19.12	primer	13831	Lan & Col
F7B19	F7B19.27	primer	27033	Lan & Col
F7B19	F7B19.2	primer	30189-30791	Lan & Col
F7B19	F7B19.43	primer	43142	Lan & Col
F7B19	F7B19.3	primer	55446-56209	Lan & Col
F7B19	F7B19.59	primer	59771	Lan & Col
F7B19	F7B19.4	primer	70859-71492	Lan & Col
F7B19	F7B19.77	primer	77633	Lan & Col
F7B19	F7B19.95	primer	95351	Lan & Col

**FIG. 15A-1B**

GTGTGGCCTCGTGTGACCTGAC  
CTGGCCCATCCCCTTATCGGTTTAC  
ACCTCCCCCACACTTAAACGACACTG  
TGAATGCTATGAAAGATGGATGAAAC  
AATCGGGCTCGGTTGTGTAGAAAC  
ACTTGTAGGCCCTTTGATGTTCTG  
ACGAACCCGACGACCACTG  
GACGGTTGAAAGAAAGCACAG  
CGACCATTCACGACCCATAC  
ATAGCGTCAGCCCTCATTTTCAG  
CAAATGGCGGAGGGG  
GGTGGGAGAACGATGAC  
TTCCGCGCCCAAAGGTG  
AAGAGGCTGGAAATTGGTTGAG  
AAGGTCCGGCGTGTGAG  
TAACGTCAATCAGCGGTAGGAAAC  
CCCCGCTGAACCTGACTGACTACGAG  
GCTCGTTGCGGTTGCTGTTT  
CAGGAAAGTGGTTGGATTGATG  
ATTGTTGCCCATCGTCCTTC  
TTGAAGAAATGCGCATAGCCGTAG  
AAAAACCGTGAGACCCATAAATG  
ATAACCGAAGAAGCCGAGAAATC  
TCGATTGCCAGCAGATCAGAAC

AGTTGCTTCGTTGCTTGCTTATTATG  
AGCGCAATCAAGCTATCCCTACATA  
CTCAGAAATCCCAAAACAGAGCCACAC  
AGACGGCTAGTGATTGTTGGTGG  
ATGGCGCAATCAAAAGCAATCC  
TGCTTTGTGTTGCTTTGATTATTCTATTAG  
ACGCCTTTGATTCCATTCTTACC  
AGAAGATGATGGCAAGTTACGAAGAG  
AAGCCCATTCAAAAGAGTTAGGAGAG  
ACCTTTTGTGCTTGTATTTTCGTG  
TGTGGCAAGTCATGGGTAAGGAG  
CCGGTTTCTGCGATATTTGGTTAG  
AGAGTCAAGCCCAAGCAATAACAGG  
GAGCGGAAGTAGATGCAGAAATGTC  
GGTCCGAGTGATGTGATTGAGTG  
TTACAAGCGAGAAAGATGAGAAGC  
TCCGCCACCCGATAAGATACGAC  
CCGCGGTGGCTGCTTTTAG  
TGCCCTCTTCCGGAACCTGGTG  
TTATCAATGTATTTCCCTGTGTATC  
TCTGGGATGAAGAGAAAGAGAACTGTC  
TCCAAATCGCGAAAGTGACAG  
ATCCGGAGACGAAATGAACCTAG  
TGGGGCTTGTAAGGAGGAGTAAC

FIG. 15A-2B

F7B19	F7B19.5	primer	98977-99658	Dom?
F7B19	F7B19.6	primer	112337-113039	Lan & Col
T15D9	T15D9.3	primer	2985	Lan & Col
T15D9	T15D9.1	primer	12299-12914	Lan & Col
T15D9	T15D9.19	MARKER	18991	LAST RECOMBINANT Col
T15D9	T15D9.2	primer	37103-37728	Lan & Col
T15D9	T15D9.3a	primer	52189-52811	Col
T15D9	T15D9.55	primer	55134	Lan & Col
T15D9	T15D9.73	primer	72993	Lan & Col
T15D9	T15D9.4	primer	73930-74552	Lan & Col
T15D9	T15D9.5	primer	86724-87494	Lan & Col
T15D9	T15D9.93	primer	93763	Lan & Col
F7K9	F7K9.3	primer	21647-22276	Lan & Col
F7K9	F7K9.2	primer	12216-12843	Lan & Col
F7K9	F7K9.1	primer	3590-4226	Lan & Col
F12P23	F12P23.3	primer	61772-62430	Lan & Col
F12P23	F12P23.5	primer	44870-45511	Lan & Col
F12P23	F12P23.4	primer	40880-41507	Lan & Col
F12P23	F12P23.2	primer	22431-23107	Lan & Col
F12P23	F12P23.1	primer	3352-4026	Lan & Col
T4D8	T4D8.5	primer	81647-82250	Lan & Col
T4D8	T4D8.3	primer	47146-47883	Lan & Col
T4D8	T4D8.2	primer	21848-22453	Lan & Col
T4D8	T4D8.1	primer	18915-19589	Lan & Col

**FIG. 15A-1C**

AGATGGGGTGCTATTCTTGTATG  
AGGGCGAAACTTTGAGAGCAC  
AGCGTCGGCGGTGTGGAG  
GCTCCGCCATCTCCTCGTC  
GAGCCCTTCTATGAGCCTACCTGTTT  
ATGGGGTAATCGAATAGTGTGGTC  
CGGAGAAAGTTGGGGTTAGTTG  
GCTGCCAACCACACTTTGCTC  
AACCGGTTGATAGTAGACGAGATG  
GTAAGACGGAGCCCCCTGAAG  
TCGGAAAGGCTAGAGATGGGTAACCTG  
TTTGCGGATATTCTAAAGGTGATG  
GGATGCAATGCCCGTTATGATG  
CAAAGCGGCCATCTCCTTC  
ACTATGCGTGGGTGGCTTTGTG  
AGCGAGGTTATCTATCAGGGTTG  
CTTCATTGTCATCATCGTTATTAG  
TACCCATGCCCTTGACTGCTG  
TCGTCGAACTAATTGGTGGGAAC  
ACAATGGCAACAATGGGCTGATAG  
CTCGGTCTGGTAATGTGAAGTGGT  
GCCCCGTCTGCCATCTCTATC  
AAACTCGCCGCCCTCGTGTAAC  
CTCGTCTCATCCAAATCCCGTCC

GCGGTCGAGTGATTGCTGTAG  
TATCGGGTTTTGAAGAGGGAAGG  
TCCTGGCAAAATTGCTTCTCGTTG  
GAAGTCCCATGCCCTATCCCTG  
AGAGATCCCCCTGTACTAAAGCCTATTCTG  
CCCTAGGGCATCCGTTTTTATCTC  
GAGAGGTTTGGGTGGGCTTGTAG  
ATGTTATCGTCGCCGCGTTTATG  
TCCGGGGTTGCGATAGAG  
AACATGTTAAAGCCAATACCCCTCTC  
ATTGGACTATATGGGCCCTCGTGAC  
TACTATTGCGCTGCTGTTGAGG  
TCGAGGGAGGATGCTGAGTATG  
GCAATTCATACCGCCACATCTG  
CAGGGGCATCGGGAATCTC  
GATTAGGTCGCTTCTTCCAGTTAG  
GGTGTGAAGTCTGAGGCTCCC  
TTCTGAACGTGTGTCTTCTATTG  
TCGGGAAGAGTGCCTAAGAG  
TTCGGGTGCTGTGTTCTCTAAG  
ATACGTCGCGGAGTTGAG  
CGCCTCCTTCACAGCCACAA  
AGGATAAACCCATAGCTTGACCAG  
CAATATAACCCGTCCTCGTGAAG

FIG. 15A-2C



Sequenced Clone	Marker name	Marker or Primer pair	Marker Location	marker properties, position
T5H22	T5H22.00	primer	248-2654	Lan & Col SSLP
T5H22	T5H22.21	primer	21508-22868	Col Dom
T5H22	T5H22.41.3	primer	35072-35719	Lan & Col
T5H22	T5H22.41.4	primer	64404-65591	Col Dom
T5H22	T5H22.65	primer	65036-66470	Lan & Col
T7M24	T7M24.04	primer	4816-8214	Lan & Col
T7M24	T7M24.46	primer	46240-47868	Col Dom
T25H8	T25H8.01	primer	1889-2953	Lan & Col
T25H8	T25H8.17	primer	16846-17990	Col Dom
T25H8	T25H8.22.9	primer	22482-25074	Ler & Col
T24M8	T24M8.65	primer	65402-66309	Lan & Col
T24M8	T24M8.54	primer	53857-54655	Col Dom
T24M8	T24M8.43	primer	42439-43274	Lan & Col
T24M8	T24M8.22	primer	22640-23386	Lan & Col
T24M8	T24M8.09	primer	5961-8374	Lan & Col
T24H24	T24H24.82	primer	82814-82890	Ler & Col
T24H24	T24H24.66	primer	66082-66765	Ler & Col
T24H24	T24H24.48	primer	47836-48636	Ler & Col
T24H24	T24H24.11	primer	11212-11867	Ler & Col
T27D20	T27D20.77	primer	77681-78420	Lan & Col

Inventors: Preuss et al.  
Title: "Plant Chromosome Compositions And Methods"  
Atty. Ref. No.: 30880/30002A  
Serial No.: 09/531,120  
Phone No.: (312) 474-6300

Fig. 15B-1A  
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**FIG. 15B-1A**

Forward Primer

TTTGTACCCCTTTGGCTCGGACTGG  
GTCGCCCTTGGTCTAGTAAATGG  
TTGCGAGAAACTTGCAGGAACATC  
CTCCCTCGCATATTTGTGACTG  
TCAACCTAAGGCAAAATTTCTAAG  
GTGCATGGCCTAAACAACAG  
ATGTTATGTTTACGTCGGGTTGTGTTG  
TGACGAAGAAGGGGAAAAGTTG  
ACTAAAGCCCCAACTGAAGAGGAAG  
AATCGATCCGTCTTTCACCAAC  
CGGCATGACCAAAACCCTAAACTC  
TAATAAACCGCTCAGCCACCCTCTAAG  
CTTAAATTGCCCGTGATGATGGTTG  
ACGAGAAGCGAAAACCGAAGATAG  
GAGTTCTGGGGTAAATTTCCCTCTCG  
AGACAGCCGGAAGCAATGGTGG  
GTTGAAGGACCGGAGTTGTTAGAC  
CCCCAGCCCATTTGAGTGAGTAG  
GGCGGCGTAGTTATGTTGATTGAG  
TCGCGCAAAATGGGACACG

Reverse Primer

AAGGGACACGCACAAAACGCTCTC  
CTGTTCTGCTCGCCTTCTGCTG  
TTAGAAAAGCATCGGGCACCAAAC  
GTTGCCAAAAGTTCTCTACGATTC  
TTTAATGAAGGCCCAACACC  
GTTCTCATAACGGGTCAGTCC  
TCTCGGCTCCGGATGCTATTGTATTTC  
TGACGTGGTGAAAAGTAGGCTGTGAAG  
AAACCGCCACTACCGCCATAA  
CTTCCTGCAGCCGTTCTTC  
AGGGGAAAGATGAAAGATGAAATAAG  
GGGCTGCTCCAATCTCGCTACAC  
GATGGAGTCGGCAAAAGATAGGATG  
CGAACCTAAACCAAAACCTAAACTGAATC  
ATTCTTGCGTGTCCTCGGTGTAAC  
TCTCGCTGCTGGACATACCTCACTCAC  
TGTGGATCGGTTATTGGAGGG  
AGCGGCGGCCCTTGAGAGTATC  
TACCACGGCCCCGAGATACTAAC  
CGGGAGGCTCGGGAATC

FIG. 15B-2A

T27D20	T27D20.64	primer	64198-66686	Ler & Col
T27D20	T27D20.51	primer	51084-51783	Lan & Col
T27D20	T27D20.41	primer	41203-42770	Lan & Col
T27D20	T27D20.06	marker	6107-6887	Col Dom
T19B17	T19B17.96	primer	96402-97060	Lan & Col
T19B17	T19B17.77	primer	77318-78093	Lan & Col
T19B17	T19.B17.59	primer	59092-59808	Lan & Col
T19B17	T19B17.44	primer	44057-44788	Col Dom
T19B17	T19B17.30	primer	30680-31352	Lan & Col
T19B17	T19B17.11	primer	11260-12044	Lan & Col
T26N6	T26N6.12	primer	12724-13462	Lan & Col
T26B6	T26N6.27	primer	27839-28536	Lan & Col
T26B6	T26N6.42	primer	43996-44639	Col only
T26B6	T26N6.59	primer	59333-59938	Col only
T26B6	T26N6.74	primer	74460-75083	Lan & Col
T26B6	T26N6.93	primer	93352-93986	Lan & Col
F4H6	F4H6.44	primer	42567-43173	Lan & Col
F4H6	F4H6.60	primer	60209-60835	Lan & Col
F4H6	F4H6.82	primer	82859-83642	Lan & Col
F4H6	F4H6.100	primer	100331-101001	Lan & Col
T19J18	T19J18.12	primer	12781-13435	Lan & Col
Y19J18	T19J18.27	primer	28093-29954	Lan & Col
T4B21	T19J18.71	primer	6380-7009	Lan & Col
T4B21	T19J18.42	primer	20045-20648	Lan & Col

**FIG. 15B-1B**

ACCTGCGATAGAGTTGTGAGTTC  
CCGCCGGCTTATGCTGAG  
GTGATTTCGACGACATTGAGTG  
TCGAATGGCTGAAAGAAAAGATAAGAG  
CGTCTCCCGTGAGGTGGC  
CGAACCCCATCCGAACATAAC  
AGCGGTCAATGTTCTTCAATGTCGTAG  
CTGCCCCGACCACCTTTCAAC  
ATCGCCGCCGTCTTCTTCAG  
TCATTGCGCTAGAGGTGGAGTGC  
CACGGCATCATTCATCAACGAG  
TCTTCCGATGACGACAACGACAC  
GACGGCCTTTTCATTCTCACACAG  
GCCTCGAACCCCTACACCTCCAC  
ATGGGGCCCTTTGACTACTGAG  
TTCCCGCATGCATTAGTTCTTGTG  
GCAGACGCGAGGACACAGACAG  
GTTCCAACGCTAGCAAGGTCTG  
ACAAATCAGAGGCCCAAGTCAATG  
ATCCAACGCCCAATGTCAAC  
ATGCCCATAAAGAAAGCCCGTC  
CAGCGCTGTACAGTGGTCAATG  
CATTACTTACCCGCTTCCGCTTTATC  
TGTCGCCCTTACTCCATTCTGTTCAAC

CTGCCCTTGCCGATAAATAGTC  
GAAGAGAAATGCCCTGTGAGTCC  
TACATTTTTCAGCCATTTTGTG  
AAAACGGGTGCCGGAAGATG  
ATTTTCATAAATTAATTTGGCGTGTGC  
TGCCACAACAACCTCCACTATG  
TATCGCGCGGAGTCAGGAG  
TTGCGGATTTCGTTATGCTGTTCTC  
CAGGTTACGCCCGTTCAACTATAATC  
GGGTAGAAAGAACGAGAGGGATAG  
GTAGGATCCGGCTGAATAGTGGTGG  
ATTCTGCTGCTGCTGATTCCCTG  
TTTCATAATTGCTCATCTAACCCCTTC  
AGTCGCCGTAGCAAAATGAAACC  
TCCGGAGACGATTTTGATGAC  
TTGCCATCATCTTTCTGTGTTTGTCTATC  
CAGCCTAAGCCCATTTGTTTGAAG  
AGGGCCCAACATGCACATAAG  
TGGGCCGAATAACAGCAAGTCC  
TTAAGTGCGGTGCGGTTCAAATAC  
CGCCTATCTTCGGTGTCTCGTC  
CGTGGTCAAGTGGTCAAG  
AATGTTAGTCCGAGTTTATGTTGTGTC  
CGGCCGCCCTTCATGTATCTATCTC

FIG. 15B-2B

T4B21	T4B21.20	primer	21757-22522	SSLP polymorphic
T4B21	T4B21.35	primer	37346-38074	Lan & Col
T4B21	T19J18.57	primer	38498-39157	Lan & Col
T4B21	T4B21.52	marker	54320-55077	Lan & Col
T4B21	T4B21.68	primer	69927-70543	Lan & Col
T4B21	T4B21.83	primer	85772-86299	Lan & Col
T1J1	T1J1.08	primer	8862-9483	Lan & Col
T1J1	T1J1.23	primer	23155-23843	Lan & Col
T1J1	T15D16	marker	38027	CAPS
T1J1	T1J1.39	primer	39177-40174	Lan & Col
T1J1	T1J1.50	primer	50248-50937	Lan & Col
T32N4	T32N4.09	primer	10175-11108	Lan & Col
T32N4	T32N4.24	primer	24917-25724	Lan & Col
T32N4	T32N4.45	primer	45840-46451	Lan & Col
T32N4	T32N4.46	primer	46637-47558	Col Dom
T32N4	T32N4.60	primer	60777-61645	Lan & col
T32N4	T32N4.66	primer	66497-67374	Col Dom
T1J24	T1J24.114	primer	114825-115648	Lan & Col
T1J24	T1J24.90	primer	90665-91646	Lan & Col
T1J24	T1J24.81	primer	80921-81638	Col Dom
T1J24	T1J24.79	primer	79569-80351	Lan & Col
T1J24	T1J24.61	primer	60440-61245	Lan & Col
T1J24	T1J24.51	primer	51061-51798	Lan & Col
T1J24	T1J24.27	primer	27855-28895	Lan & Col

FIG. 15B-1C

AATAGGCTTTTCCGGTGCTTCTC  
GTGAAAGGAGCAGCAGGAACAGTG  
CTATCAACGCAGTCAAAGAAAGG  
ATAGACAAAATTGGCAACACATACC  
TTGTCAATTGGCGTGCTCTATC  
AAGCCCGGATTGGTTC  
TAGAGCGGTAACTTAACGAATGTGC  
TGGAGGGCTTGCAATGTGAGAGTG  
AATCAATTGGTTTCTACTTTTGTAG  
ACCGGCTCATTTGGCTAAAAAGTTC  
AAGTCTGGGAAGAGGATGAGAACCC  
GGCAGATACGGCGGTCCATAC  
CGTGGGAGCTGCCGTAGAAAG  
CGCCCCCTTCAGGTTAGTCC  
CTGGCGTACGAGAGTGCTTGTG  
CTCTCGCGTTGCTTCTGG  
AAAGAAGCGAAACAACATAACCATAG  
CATGCCCCGAATTACGACACCTC  
AATGAATGGGACGAAACGAAACT  
AATCGCGACTTTGCCTTCC  
GTGTATCGGGGCCATCTCAG  
CCCAAAGTATAAGCGCCACCTA  
TCCGGAAGGAGCCACATAAG  
GCCCGGAGTTGGTCATAAGG

AATTGATTTGGGGTTTCTCTGTTC  
ATTTATAGGCCAATGACCCAATCG  
AGAAGGTGAGCCAAAGAGATTAGTG  
CACGCCACTCTTCATCTCCTTTC  
GCTTTCCCAACCAATATCCTTTC  
CGTACGCATGGGTCTATTG  
ATGTGGGCCAAATAAATCAAAAC  
CAGAGCCGGATGAGAAACAGAGC  
AACTCCGACTGAAGGTATAGC  
TTAAGGGTTGGGTTTCATCTGTCTAC  
ATAAAGTACGCCGCCCATCAATAG  
TCTGAATCGCATCTCCTCGTGTAAG  
GCCGTTGATGATGAAATAAGGTG  
GTTTGCTCCCCCTCCAGTG  
ATGACCCCTGTGCTTTTGCTCCTC  
GCCCGGCTGGTGCTATTTC  
GGAGACAAAGAAATCGGCAGAGTAG  
GCGCCAAATCTCTAAACAACACTC  
GCATCCCCGGTACTGGTGAG  
TAAACTACTATCCCACCACCTACC  
GCTCAACATCGCCGCAATCT  
TAAGCGCCTCACTTCACCATTG  
TCCCCAGACCTCTCGTTGAC  
TCAATTTCAATCCCCCGTGGTC

FIG. 15B-2C

T1J24	T1J24.23	primer	23943-24800	Lan & Col
T1J24	T1H24.01	primer	683-1663	Lan & Col
			unknown-unique	
F6H8	F6H8.70	primer	seq	Lan & Col-
F6H8	F6H8.51	primer	unknown	Lan & Col-
F6H8	F6H8.94	primer	unknown	Lan & Col-
F6H8	F6H8.114	primer	unknown	Lan & Col-
F2112	F2112.82	primer	82463-83233	Lan & Col
F2112	F2112.70	primer	70415-71220	Lan & Col
F2112	F2112.68	primer	68874-69938	Lan & Col
F2112	F2112.50	primer	50288-50891	Lan & Col
F2112	F2112.48	primer	48960-50345	Col
F2112	F2112.29	primer	29895-30702	Lan & Col
F2112	F2112.02	primer	2313-3098	Lan & Col
F14G16	F14G16.100	primer	3496-4174	Lan & Col
F14G16	F14G16.81	primer	22905-23604	Lan & Col
F14G16	F14G16.66	primer	37689-38299	Lan & Col
F14G16	F14G16.49	primer	54150-54777	Lan & Col
F28D6	F14G16.32	primer	8172-8825	Lan & Col
F28D6	F14G16.66	primer	9445-10055	Lan & Col
F28D6	F14G16.16	primer	24251-24873	Lan & Col
F28D6	F14G16.01	primer	39801-40577	Lan & Col
F28D6	F28D6.42	primer	42565-43225	Lan & Col
F28D6	F28D6.50k	MARKER	50323	Col Dom

FIG. 15B-1D

TGGTCGGGCATATTGTTTTTCTTGTG  
TTCCCCAAAATCGTTCAGC  
ACCCGAGAAGCCGATGACC  
GCTAAGCCATCCAAGTTCTGAG  
CGTGCAGGGGAGTGTCGTG  
CGCGGCTGCCCTTCATGTATCTATC  
TTTTTGGGGATAGGGATTGAGTGTG  
TGCTGGCCCTTTGTCACTATTGTC  
CCAGAGCCGGGAAAGCAATAC  
TGACTATAGGGCGGTTGTGTAAG  
ACCTTTCTTCTCAACGCACCTCACC  
GTGGGTCGAGTGGTGGTAG  
AAAATCCTCCCGGTCAACATC  
AAACTTTCGCCACTCTCCTATTATG  
CGTCTTCATCGGCTTCGTTGAG  
AGCGATTGTACCCACCATTC  
ACTTTGGGCAATGAAGCGTATG  
TCTCGCAGTTGCAGAGATGGTG  
AGCGATTGTACCCACCATTC  
TGGTGATTTTGTGCTTTGTTCTCAGG  
GTGCGGAAATCTCTGGGCTC  
ATCAACCCCAAATCACCAGAAAC  
CGGCTGGCTTTATTATCTGAGTTG

CGGCGCTGTCCCTGGTTCC  
ACATCGCCTCTTCAACCCACTC  
AAATTGGGGAGTTTGATAAGTGTG  
GTTTGTGCTTTGGCTTTGTATGTTT  
CAATTCAATCCCCGCTGGTC  
GCCCATTTGTGCGCTTATCTATTC  
TAAGCGAAGGAGAGGTTTGAAGTTG  
CCGCGGGGACTGCCCTACTC  
TAGCCGGGCTGGTCTCGTCG  
TTGGCTTGGAGTTTGGCTCGTC  
AACCCCTTGGCATATAACTCCGACTC  
GGATCCCTGTACTTAAGCCTATTC  
CATCATCCCCAATCCCAAATACAAGTC  
ATTGCGTAAGCGTTGATGACTC  
TGGGAGCGGAGGATTCTTG  
GTCGCGCAATCTTCTTCCCTCTC  
AACCCCTTAGGATTATTCTAGTGTTC  
TCCGCGAAGAGAGAGTGATGG  
GTCGCGCAATCTTCTTCCCTCTC  
GTTGTTCCGCTATGGGGCTAAGG  
AATCACTCAACCGGAAACTCTATC  
AATCGCGGTTAGCCACTTCATC  
TTCGGGAAGCCTGTGGAAG

FIG. 15B-2D



F28D6  
F28D6  
F28D6  
F28D6

F28D6.58  
F28D6.76  
F28D6.93  
F28D6.120

primer  
primer  
primer  
primer

58994-59869  
76571-77289  
93823-94512  
7985-8702

Col Dom  
Lan & col  
Lan & Col  
Lan & Col

Inventors: Preuss et al.  
Title: "Plant Chromosome Compositions And Methods"  
Atty. Ref. No.: 30880/30002A  
Serial No.: 09/531,120  
Phone No.: (312) 474-6300

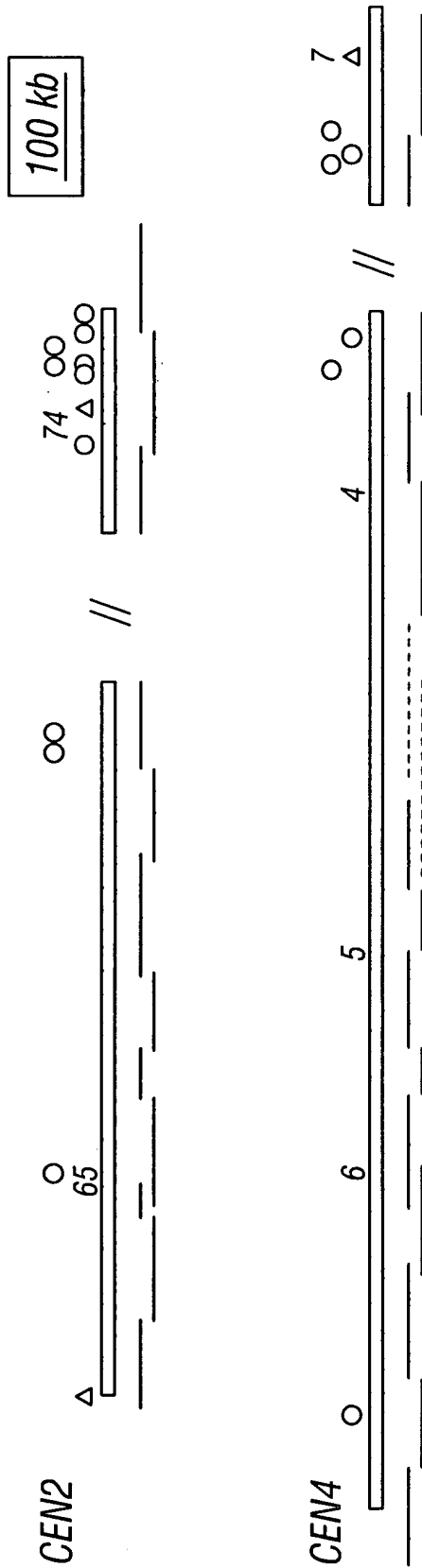
Fig. 15B-1E  
69/183

FIG. 15B-1E

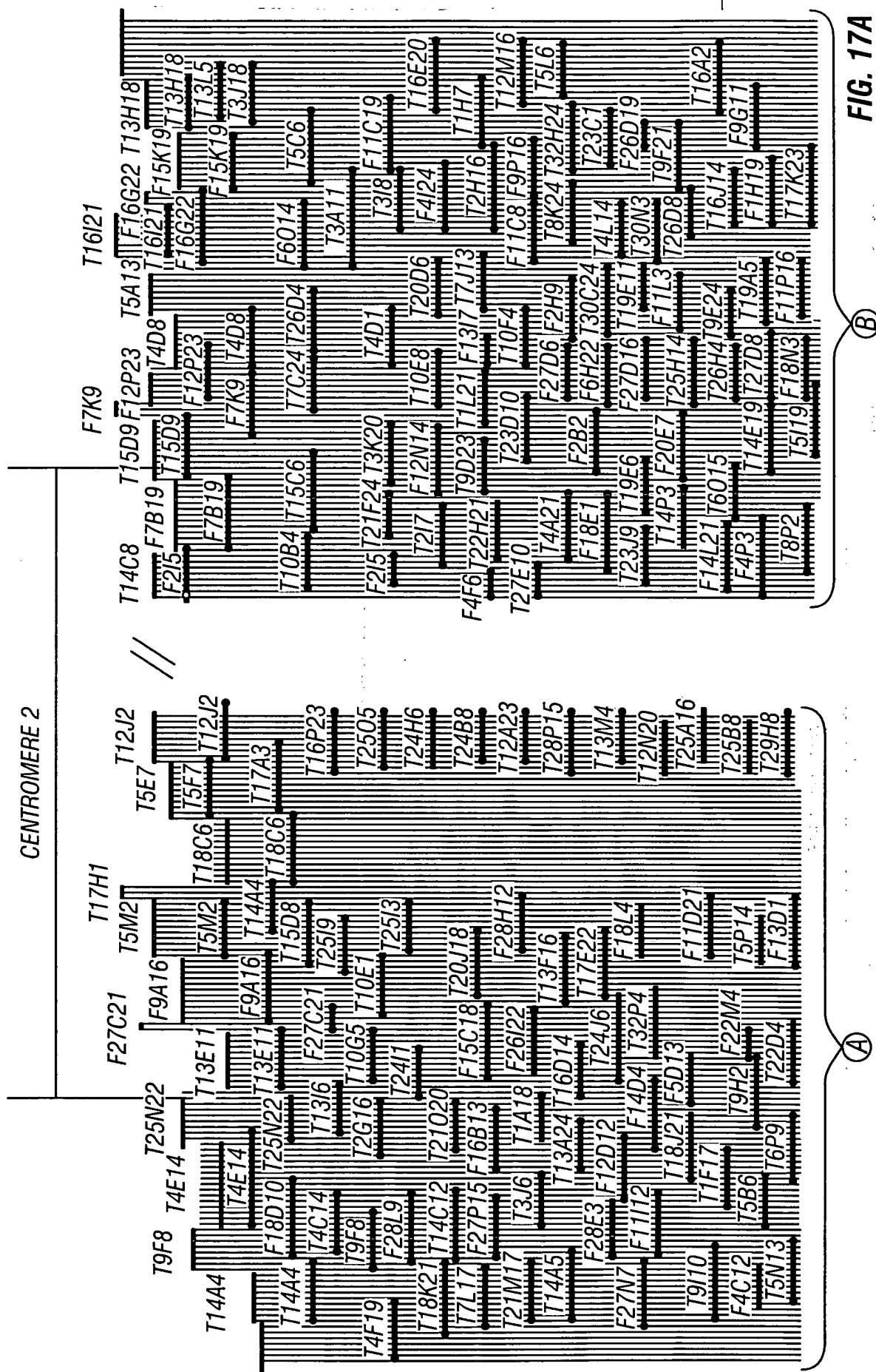
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ATACTTAGATGCAATGGGTGTGGTG  
TACTCCGCATCATCTTCCATCTCTTC  
CCTAAGCCCCGAAACCAAGTGAG

ACCCCGAGCTCAACTTCTTAGG  
AGAAATAGGAGCTGGGAGGTCAAAC  
CCCCATCCTGCCGACATAAAG  
GAGGGCGAGTAGTTGAATCTGC

**FIG. 15B-2E**



**FIG. 16**



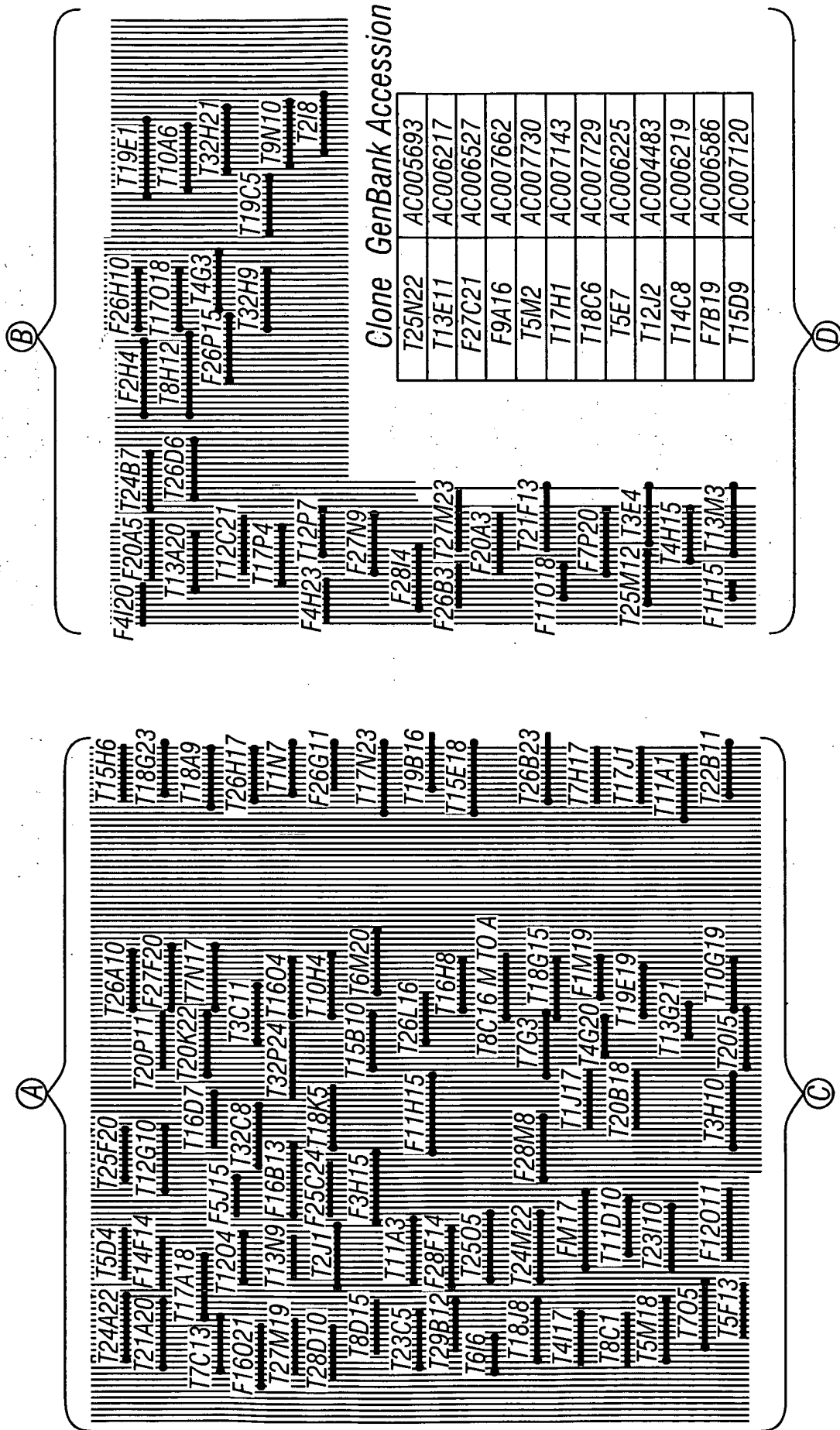
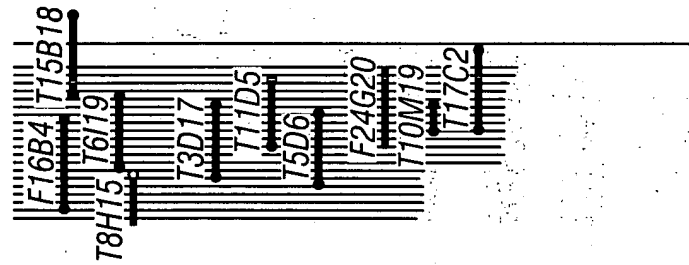


FIG. 17B

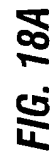
(D)

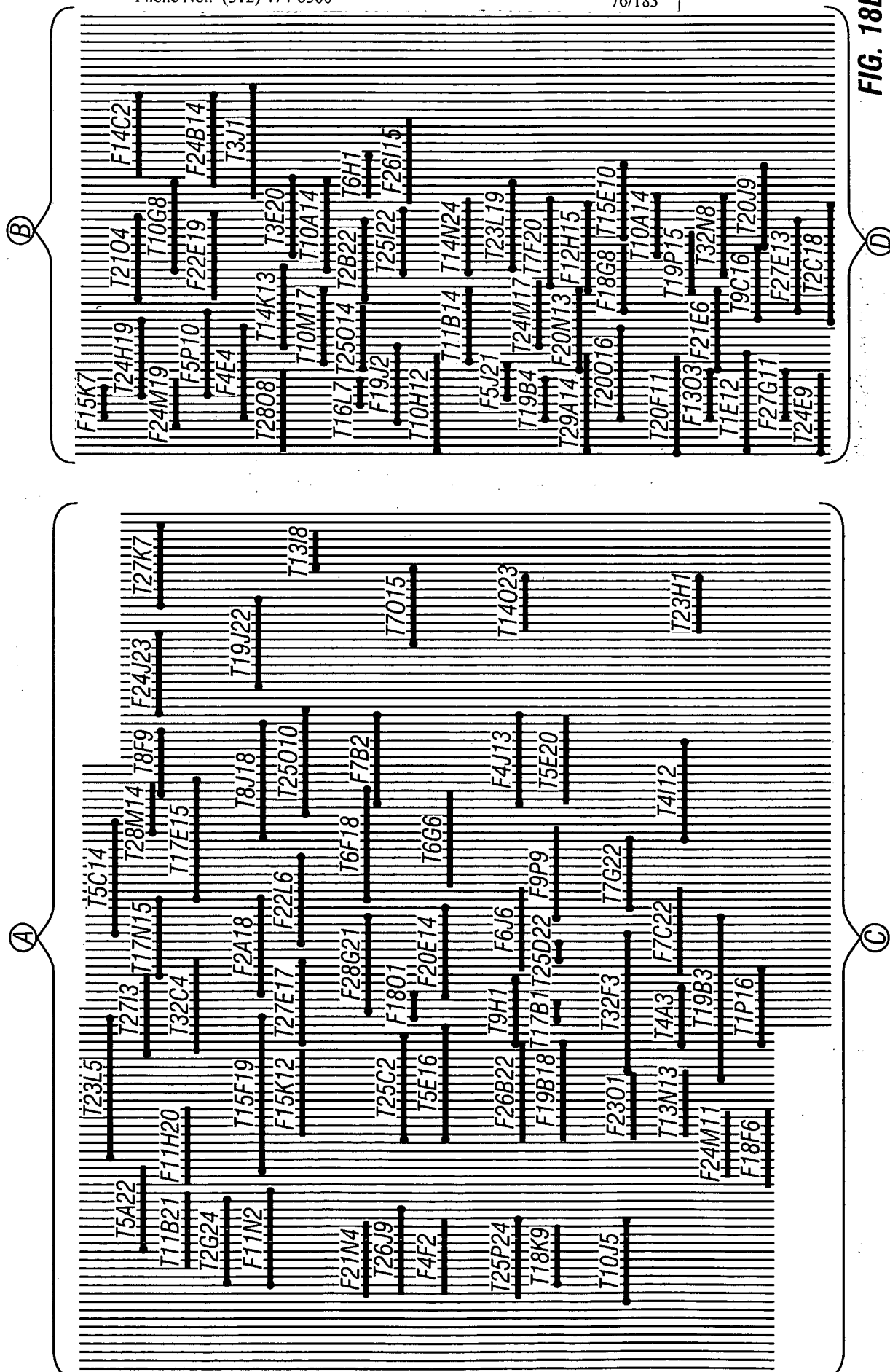


(C)

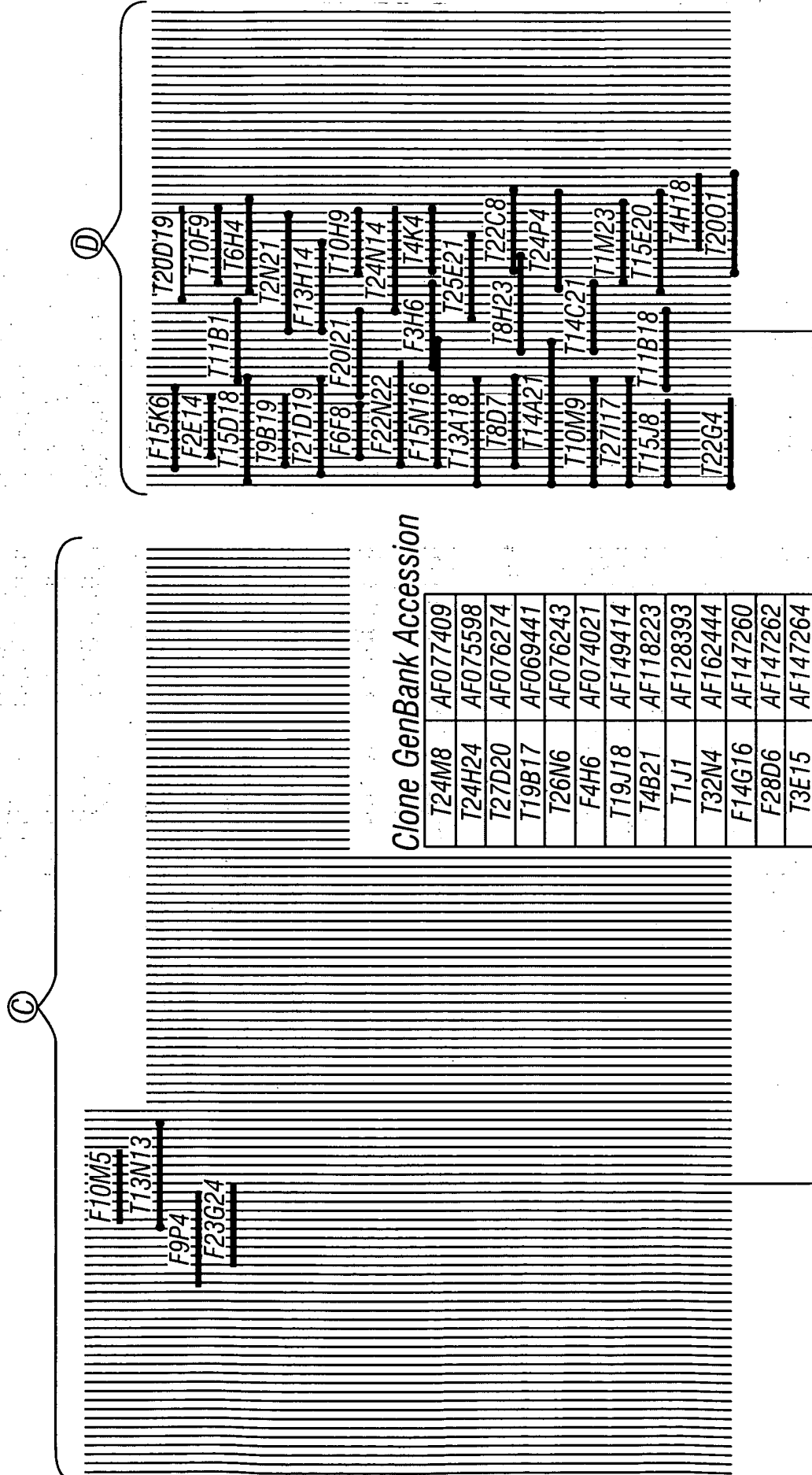


FIG. 17C

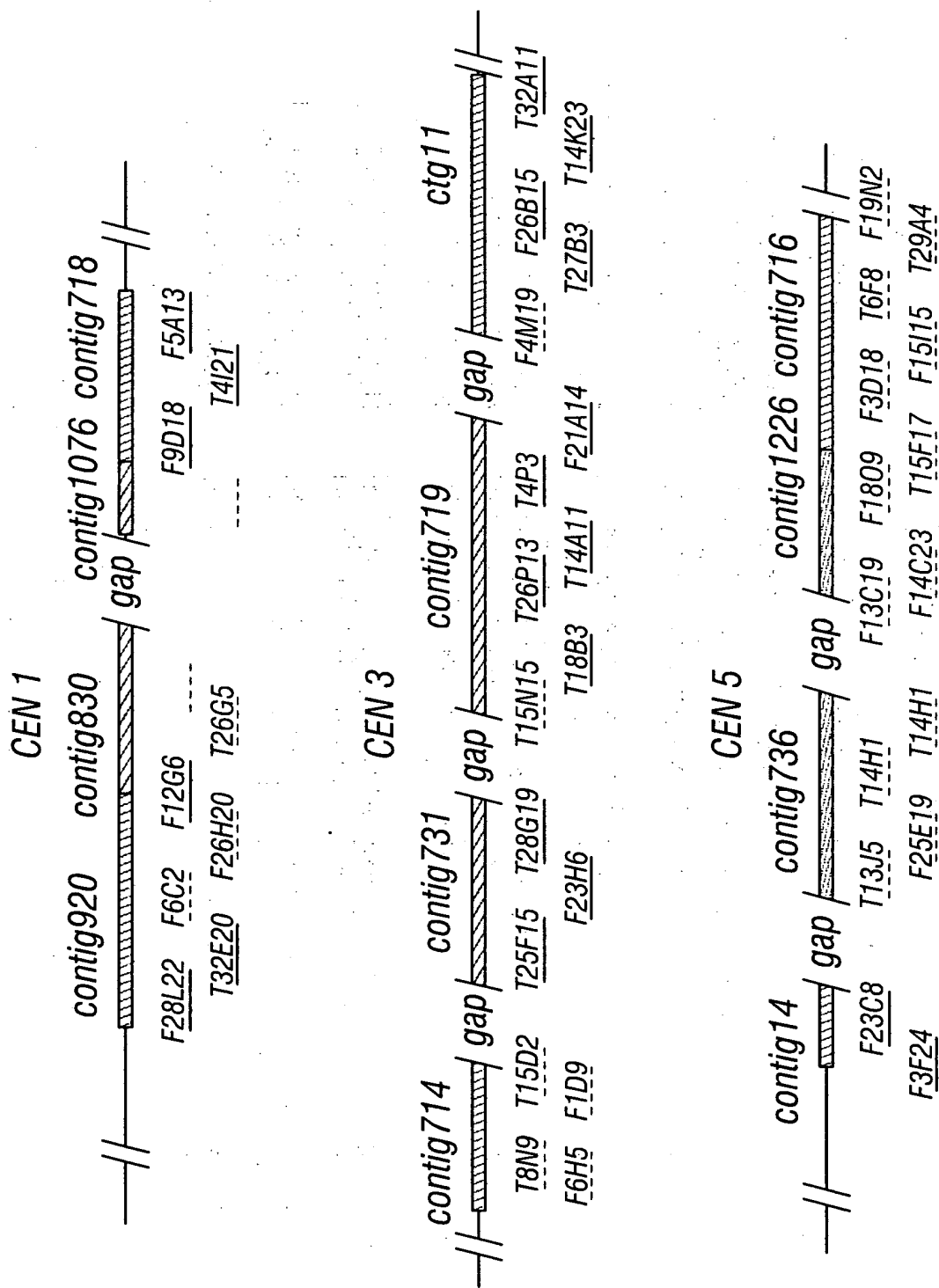




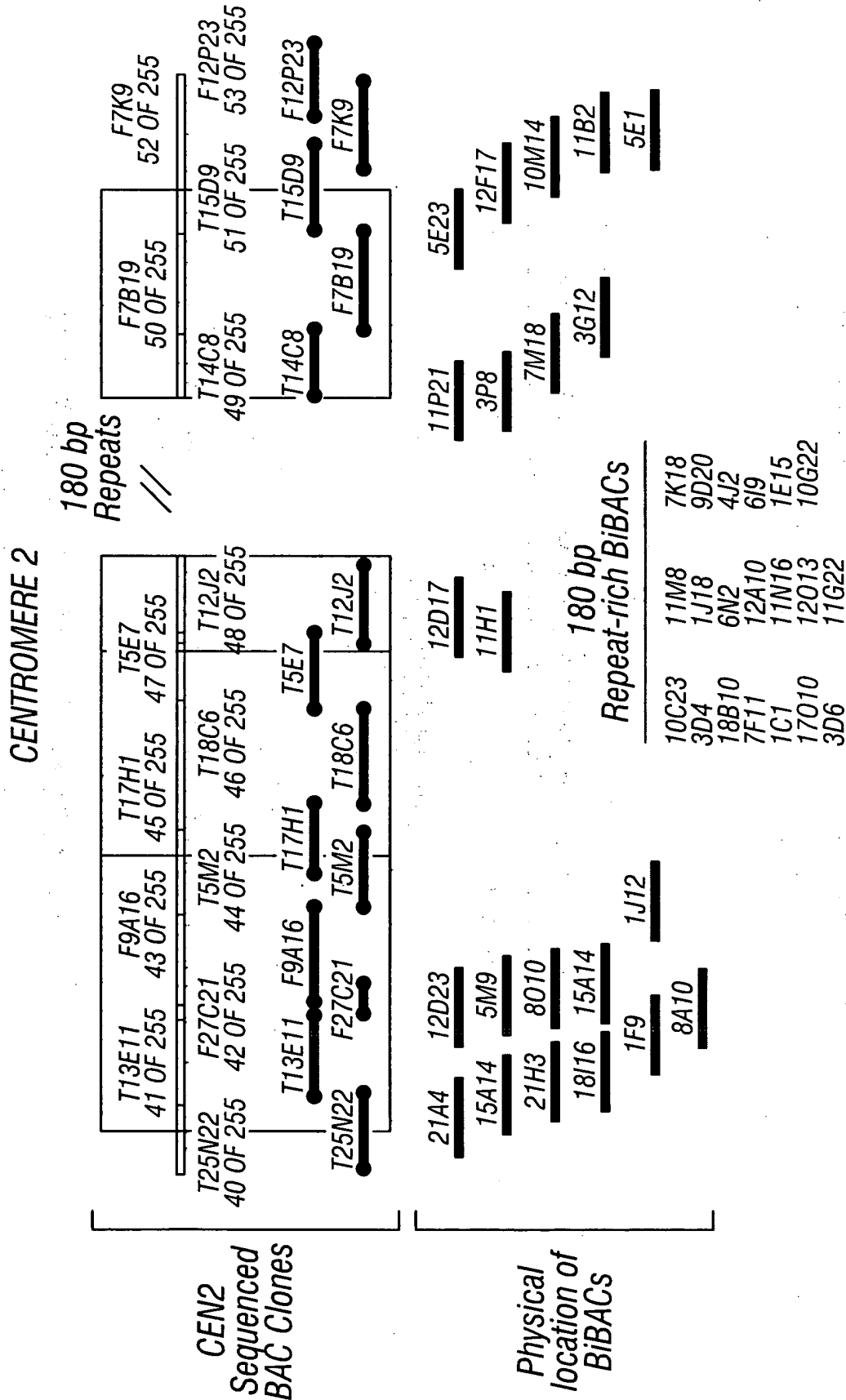




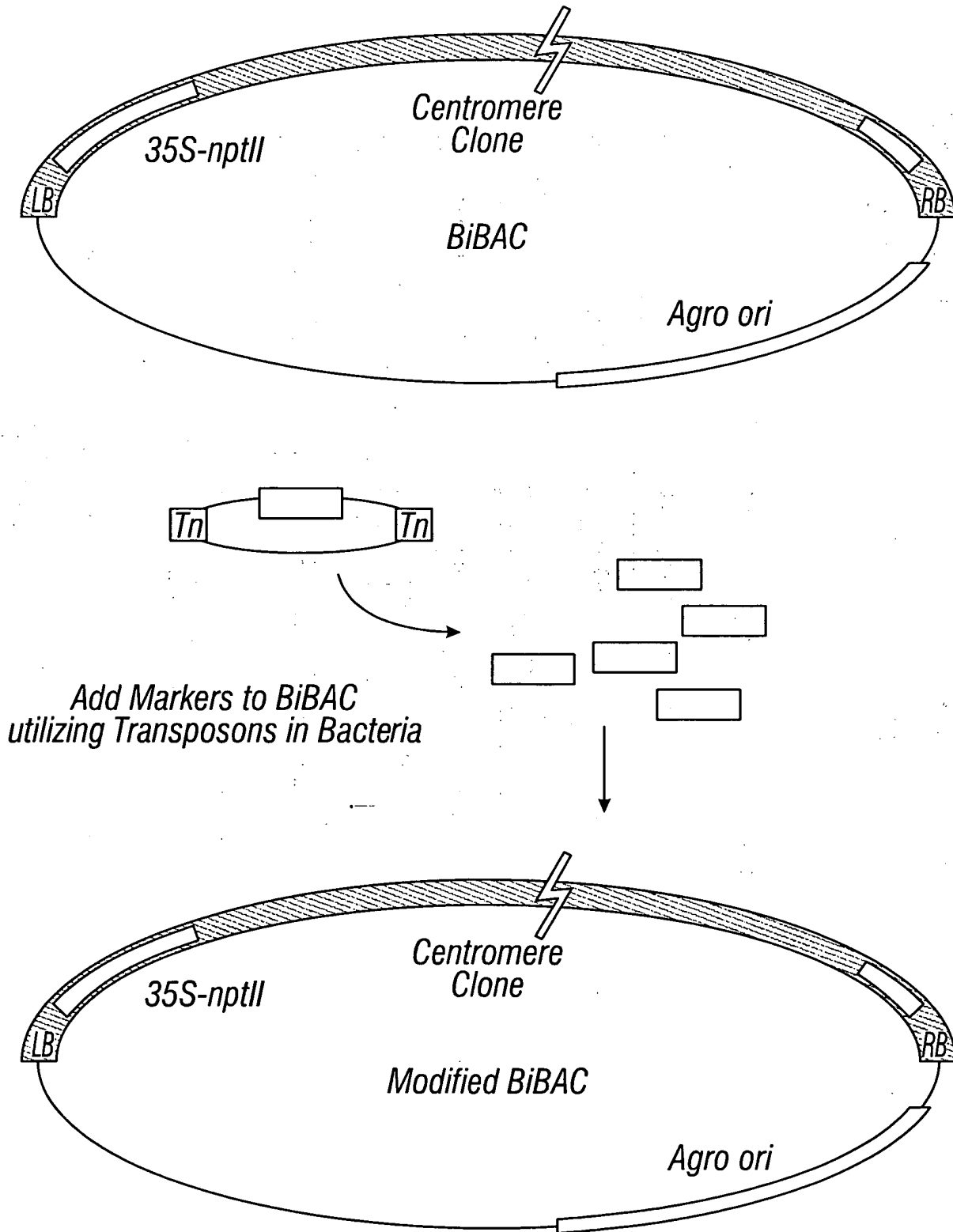
**FIG. 18C**



**FIG. 19**



**FIG. 20**



**FIG. 21**

*Measuring centromere functions  
in plant mini-Chromosomes*

Qualitative assays

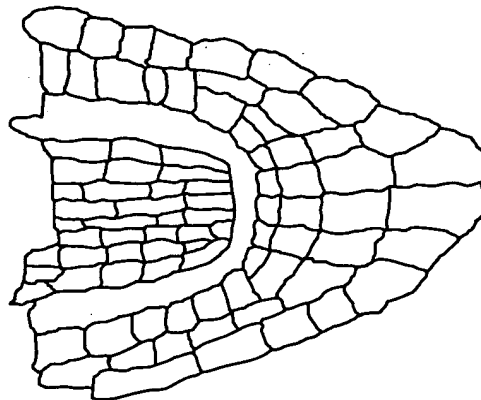


Stable

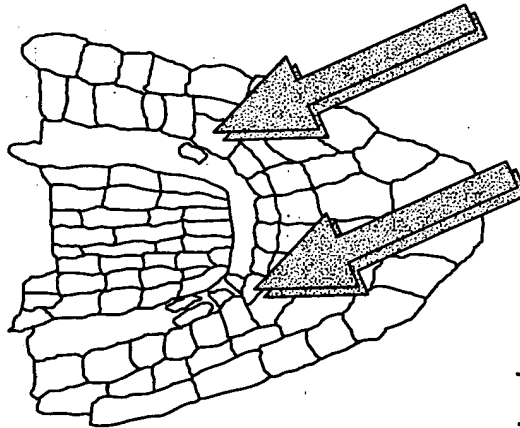


Unstable

Quantitative assays



Mitosis



Meiosis

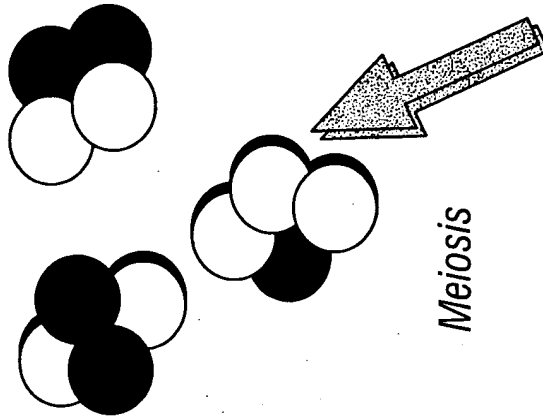


FIG. 22

	AAGCTTCTTCTTGCTTCTCAAAGCTTTGATGGTGTAGCCGAAAGTCCGTATGAGTCTTTGG	10	20	30	40	50	60
f12g6-1	AAGCTTCTTCCCTGCTTCTCAAACCTTTGATGGTGTAGCCGAAAGTCCGTATGAGGCTTTGG						
f12g6-10	AAGCTTCTTCTTGCTTCTCGAAGCTTTGATGGTGTAGCTGAACCTTCGTATGAGTCTTTGA						
f12g6-11	AAGCTTCTTCCCTACTTCTCAAAGCTTTGGTGGTGTAGACGAAGTCCGTATGAGTATTTGG						
f12g6-12	--GCTTCTTCTTGCTTCTCAAACCTTTGATGGTGTAGCCGAAAGTC-GTATGAGTCTTTGG						
f12g6-13	AAGCTTCTTCTTGCTTCTCGAAGCTTTGATGGTGTAGCTGAAGTCAGTATGAGTCTTTGA						
f12g6-14	-----CCTTGATGGTGTAGCCGAAATTCATATGATTCCTTTGG						
f12g6-15	AAGCTTCTTTTGCTTCTCATAGCTTTGAAGGTGTAGCCGAAAGTCCGTATGAGTCTTTGGG						
f12g6-16	AAGCTTCTTCTTGCTTCTAAAGCTTTGATGGTGTAGTAAAGTTTGACGAGTCTTTGT						
f12g6-17	--GCTTCTTCTTGGTTCCTCAAAGCTTTGCTCGTGTGCCATAGTCTTATTTGCTTTTG						
f12g6-18	AAGCTTCTTTTGCTTCTAAAGCTTTGATAGTGTAGTCGAAGTCCATACGAGTCATTGG						
f12g6-2	AAGCTTCTTCTACTTCTCAAAGCTTTGCTGGTGTAGCCGAAAGTCCGTATGAGTCTTTGG						
f12g6-20	A-GCTTCTTCTTGCTTCTCGAAGCTTTGATTGTGTAGCTGAAGTCAGTATGAGTCTTTGA						

FIG. 23A-1A

CTTTGTATCTTCTAACAAGGAACACTACTTAGGCTTTTAAAGATCCGGTTGCGGTTCTTAG  
70 80 90 100 110 120  
CTTTGCATCTTCTAACAAGGAACACTACTTATGCTTTTACGATTCAGTTGCGGTTCTTAG  
ATTTGTATCTTCTAACAAGGAACACTAATTAGGCTTTTAAAGATCATGTTCGGGTTCTTAG  
CTTTGCATCTTCTAACAAGGAACACTACTTATGCTTTTACGATTCGGTTGCGGTTCTTAG  
CTTTCTATCTTCTAAGAAGGAACACTTCTTAGGCTTTTAAAGATCCGGTTGCGGTTCTAA  
ATTGGTATCTTCTAACAAGTCAACACTACTTAGGCTTTTAAAGATCCAGTTGCGGTTCTTAG  
CTTTGTATCTACAACAAGGAACACTACTTAGGCTTTTAAAGATCCGGTAGCGGTTGCTAG  
CTTTCTATCTTCTAACAAGGAACACTACTTGGCTTT-----CGGTTGCGGTTCTAA  
CTTCATATCTTCTAACAAGGAACACTACTTATGCTTTTAAAGTCCAGTTGCCGTTCTAG  
CTTTGTATCTTCTAACAATGGAAACACTACAGAGGCTTTTAAAGATCCGGTTTCAGTTCTGG  
CTTTCTATCTTCTAATAAAGAAACATACATGTGCTTTTAAAGATCCGGTTGCGGATTCCTAG  
CTTTGCATCTTCTAACAAGGAACACTACTTAGGCTTTTACGATTCAGTTACGGTTCTTAG  
ATTTGTATCTTCTAACAAGTAAAACTACTTAGGCTTTTAAAGATCCAGTTGTGGTTCTTAG

FIG. 23A-2A

TTCTTATACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAACACTAAXX	130	140	150	160	170	
TTCTTATACTCAATCATACACATGACATCTAGTCATATTTGACTCGAAACACTAACC						178
TTCTTATACTCAATCATACACACGATATCTAGTCATATTTAACTCCAAACACTAA						176
TTCTTATACTTAAATCATACACATGACATTTAGTCATATTTGAATCCAAAGTACTAACC						178
GTCTTATACTTAAATCATACACATGACATCAAGTCATCTTTGACTCCAAACA						169
TTCTTATTCTAAATCATAAACATGATATCTAGTCATATTTTACTCCAAACACTAA						176
TTCTTATACTCAATCATACACATGCAATCTAGTCATATTTGATTCCAAACACTAACC						155
GTCTTATACTTAAATCATACACATGACATCAAGTCATTTTGAATCCAAACCAAAACC						171
TTCTTATACTTAAATCATACGCATGCAATCTAGTCATATTTGACTCCAAAGACTAA						176
TTCTTATACTTAAATCATACACATGACATCTAGTCATATTTGACTCCAAACACTA						173
TTCTTATACTCAATCATACACATGACATCTAGTCATATTTGACT						164
TTCTTATACTCAATCATACACATGACATTTAGTCATATTTGACTCCAAACCAAAACC						178
TTCTTATACTAAATTATAAACATGATATCTAGTCATATTTGACCTCAAAACACTAA						175

FIG. 23A-3A



f12g6-21 ----TTCTTCTTGCTTCTCCAAGCTTTGATGGTGTAGCCGAATTGCCGTATGAATCTTTGG  
f12g6-26 ----TTCTTCTTGCTTCTCCAAGCTTTGATGGTGTATCCAAAATTTCGTATGAATCTTTGG  
f12g6-3 -----TGCTTCTCAAGCTTTGATGGTGTAGCCAAAAGTCCGTATAAGTCTTTTA  
f12g6-30 ----TTCTTCTTGCTTCTCCAAGCTTTGATGGCGTAGCCGAAATCTGTATGAATATTTGG  
f12g6-4 AAGCTTTTCTTGCTTCTCAAGCTTTGATGGTGTAGCCAAAAGTCCGTATGAGTCTTTGG  
f12g6-5 AAGCTTCTTCTTGCTTCTCATAGCTTTGATGGTGTACCGAAGTCCGTATGAGTCTTTGG  
f12g6-6 AAGCTTCTTCTTGCTTCTCAAGCTTTGATGGTGTAGCAGAAAGTCCGTATGAGTCAATTGG  
f12g6-7 AAGCATCTTCTTGCTTCTCAAGCTTTGATGGTGTAGCAGAAAATCTGTATGAGTCTTTGA  
f12g6-8 AAGCTTCTTCTTGCTTCTAGAAAGTTTGTATGGTGTAGCTGAAGTCCGTATGAGTCTTTAA  
f12g6-9 AAGCTTCTTCTTGCTTCTCAACGCTTTGTATGGTGTAGTTGAAGTCCATATGAGTCTTTGG  
f5a13-1 AAGCTTTTATTTGCTTCTCAAGCTTTGTATGGTGTAGCCAAAAGTCTGTATGAGTTTTGG  
f5a13-2 ---CTTCTTATTTGCTTCTCAAGGTTTGTATGGTTAGCCGATGTCCGTATGAGTCTTTGC  
f5a13-3 AAGCTTCTTATTTGCTTCTCAAGCTTTGTATAGTGTAGCCGAAAGTCTGTATGAGTCTTTGG

**FIG. 23A-1B**

CTTCTATCTTAACAAGGAACACTA----GGCTAATAAGGCTAGTTGCGGTTCTAG  
CTTTGTATCTTAACAAGGAACACTA----GGCTTTTAAGATCCGGTTGCGGTTCTAA  
CTTTGCATCTTAACAAGGAACACTACTTAGGCTTTTACGATTCAGTTGCGGTTCTAG  
CTTTGTATCTTAACAAGGAACACTA---GGCTTTTAAGATCATGTTGCGATTCTAA  
CTTTGTATCTTATACAAGGAACACTACTTAGGCTTTGAAGATCAGAAATGTTGTTCTAG  
CTTTCTATCTTAACAAGGAACACTACTTAGGCTTTTAAGATTCGGTTACGGTTCTAA  
CTTTGCATCTTAACAAGGAACACTA-TTAGGCTTTTACGATTCGGTTGCGCTTCTAG  
ATTTGTATCTGCTAACAAGGATACACTACTTAGGCTTTAAGATCCGGTTTCGGTTATAG  
ATTTGTATCTTTAACAAGGAACACTACTTAGGCTTTTAAGATCCATTTGCAGTTCTAG  
CTTTCTATCTTAAGGAAGAACATTAGTTCGGCTTTTAAGATCCGGTTGCGATTCTAG  
CTTTGTATCTTAACAAGGAACACTACTTTAGCTTTTGGGAACCGATTGCGGTTCTAC  
CTTTGTATCTTAACAAAGGAACACTACTTTAGCTTTTGGGAACCGATTGCGGTTCTAC  
CTTTGTATTTTCTAATAAGAAATACTGCTTTTAGCTTTTGGGAACCGATTGTTGTTCTAG

**FIG. 23A-2B**

TTCTTATACTCAATCATACATAACATCTAGTCATGTTTGACTCGAAACACTAACC 170  
GTCCTTATATTCAATCATCCACATGACATTTTGTCATATTTGACTCGAAACA 164  
TTCTTATACTCAATCATACATGACAT 137  
GTCCTTATACTCAATCATACACAAGACATCTTGTCATATTTGACT 156  
TTCTAAATACTCAATCATACACATGACATCTAGTCATATTTGACTCCATAACA 172  
GTCCTTATACTTAAATCATACATGACATCAAGTCATTTTTGACTCCAAACCACAAACC 177  
TTCTTATACTCAATCATACACATGACATTTAGTCATATTTGACTCCAAACACTAACC 177  
TTCTTATACTCAATTATACACATGCCATCATGTGCATATTTGACTCCAAAACAC 173  
TTCTTATACTCAATCATAGACATGATATATAGTCATATTTGATTCCAAAACACTAA 176  
TTCTTATACTCAATCATACACATGACATCTAGTCATATTCGATTCCAA 168  
TTCTTATACTCAATCATACACATGAAATCTTGTCACATTTGACTCCAAAACACTAAC 177  
TTCTTATACTTAAATCATACACATGACATCTAGTCATATTTGACTCCAAAACAGTAACC 175  
TTCTTATACTCAATCAGAAACATGACATCTAGTCATATTTGACTCCAAAACA---CT 174

FIG. 23A-3B

```

---CTTCTTCTTCTCTCAAAGCTTTTCATGGTGTAG-C-AAAGTCCGTATGAGTCTTTG
      10      20      30      40      50      60
t12j2-1  AAGCTTCTTAGCTTCTCAAAGCTTTTCATGGTGTAGCC-AAAGTCCGTATGAGTCTTTG
t12j2-10 AAGCCTCTTCTAGCTTCTCCAAGCTTTTCATGGTTAG-CCAAATTCTGTATGAGTTTTTG
t12j2-11 ---CTTCTTCTTGCTTCTCAAAGCTTTTCATGGTGTAG-CCAAAGTCCGTATGAGTCTTTG
t12j2-12 ---CTTCTTCTTGCTTCTCAAAGCTTTTCATGGTGTAG-CCAAAGTCCGTATGAGTCTTTG
t12j2-13 ---CTTCTTCTTGCTTCTCAAAGCTTTTCATGGTGTAG-CCGAAGTCCATATGAGTCTTTG
t12j2-14 -----
t12j2-15 -----TGATGGTGTAG-CCGAAGTCCATATGAGTTTTTT
t12j2-16 -----
t12j2-17 AAGCTTCTTCTTGCTTCTCAAAGCTTTGAGGGTGTAG-CCAGAGTTTGTGTGAGTCTTTG
t12j2-18 ---CT-----TTGATGGTGTAG-CCGAAGTCTGTATGAGTTTTTA
t12j2-2  AAGCTTCTTCTAGCTTCTCAAAGCTTTTCATGGTGTAGCC-AAAGTCCGTATGAGTCTTTG
t12j2-3  AAGCTTCTTCTAGCTTCTCAAAGCTTTTCATGGTGTAGCC-AAAGTCCGTATGAGTCTTTG
t12j2-4  AAGCTTCTTCTAGCTTCTCAAAGCTTTTCATTTGTGTAGCC-AAAGTCCGTATGAGTCTTTG
t12j2-5  AAGCTTCTTCTAGCTTCTCAAAGCTTTTCATGGTGTAGCC-AAAGTCCGTATGAGTCTTTG
t12j2-6  AAGCCTCTTCTAGCTTCTCCAAGCTTTTCATGGAGTAGCC-AAAGTCCGTACGAGTCTTTG
t12j2-7  AAGCTTCTTCTTGCTTCTCAAAGCTTTTCATGGTGTAG-CCAAAGTCCGTATGAGTCTTTG
t12j2-8  -----CT-----
t12j2-9  AAGCCTCTTCTAGCTTCTCCAAGCTTTTCATGGTTAG-CCAAATTCTGTATGAGTTTTTG
t14c8-1  AAGCTTCTTCTTGCTTCTCAAAGCTTTTCATGGTGTAGCC-AAAGTCCATATGAGTCTTTG

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FIG. 23B-1A

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GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCCGGTTGCGGTTTAA
      70          80          90          100          110          120          130
GCTTTGTATCTT--CTAACAAGGAAACACTACTAAGGCTTTTAA-----G-ATCGGGTTGCGGATTAA
GCATTGTATCTT--CTAACAAGGAAACACTACGTAGGCTTTTAA-----G-ATTGGGTTGCGGTTTAA
GCTTTGTGTCTT--CTAACAAGGATACAATTCTTACCGCTTTAA-----G-ATACCATTAATGGTTTAA
GCTTTGTGTCTT--CTAACAAGGATACAATTCTTACCGCTTTAA-----G-ATACCATTAATGGTTTAA
GGTTTTTATTTT--CTAACAAGGAATCACTACTACTTAATCTTTTAAATCTTCAAGATCTGGTTGCGGTTCTA
-CTTTGTATCTT--CTAGCAAGGAAACACTACTACTATAGCTTTTG-----GGATCTGGTTGCGGTTCTA
GTTTAAGATCTT--CTAACAAGGAAACACTATTTAAGCTTTT-----AGATCCCGTTGTGTCTCTA
-----ATCTT--CTAAAAGGAAACACTACTTTAGCTTTTG-----GGATCCAATTGCGGTTCTA
GCTTTGTATCTT--CTAACAAG-----
GCTTTGGATCTT--CTAATATGGAACACTACTT
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGAGTTGCGGTTTAA
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGAGTTGCGGTTTAA
GCTTTGTATCTT--CTAACAAGGAAACACTACTAAGGCTTTTAA-----G-ATCGGTTGCGGATTAA
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGAGTTGCGGTTAA
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGTTGCGGTTTAA
GCTTTGTGTCTT--CTAACAAGGATACAATTCTTACGGCTTTAA-----G-ATCCGATTGCGGTTTAA
-----CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGTTGCGGTTTAA
GCATTGTATCTT--CTAACAAGGAAACACTACTAGGCTTTTAA-----G-ATTGGTTGCGGTTTAA
GCTTTGTATCTT--ATAACAAGGTAACACTACTTAGGCTTTTAA-----G-ATCAGTTGCAGTTTAA
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FIG. 23B-2A

```
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
      140      150      160      170      180      190
G-----ATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
GTTCTTATACTTAATCATAACATGACATATAGTCAT--ATTGACTTCAAACACTAACC 175
GTTCTTATACTCAATCATAACATGACATCTAGTCAT--ATTCTACTCCAAACACTAACC 175
GTTCTTATACTCAATCATAACATGACATCTAGTCAT--ATTCTACTCCAAACACTAACC 180
GTTCTTATACTCAATCATAACATTAGATCTAGTCAT--ATGTGACTCCAAACACTA 115
GTTCTTATACTCAATCATAACATGACATCTAGTCAT--ATTGACTCCAAACACTA 151
GTTCTTATACTCAATCATAACATGACATCTAGTCAT--ATTGACTCCAAACACTAACC 112
GTTCTTATACTCAATCATAACATGACATCTAGTCAT--ATTGACTCCAAACACTAACC 92
-----CAATCAT-----TACTT-----A 68
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 177
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 177
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTCTACTCCAAACACTAACC 178
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 110
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
GTTCTTATACTCAATCATAACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178
```

FIG. 23B-3A

t14c8-10 ----TTCTTCTTGCTTCTCAAAATATTTGAAGGTGTAGCC-GAAATCCGTATGAGTCTTTG  
t14c8-11 ----CTTCTTCTTGATTTCTCAAAGCTTTTGATGGTGTAGTC-AAAGTCCGTAGGAGTCTTTG  
t14c8-12 ----TTCTTGGCTTCTCAAAGCTTTTGATGGTGTAGCC-AAAGTCCAGATAAGTCTTTG  
t14c8-13 AAGCTTCTTTTGGCTTCTCAAAATCTTTTGATGGTGAAGAC-AAAGTCCGTATGAGTCTTTG  
t14c8-14 AAGCTTCTTTGTGCTTCTCAAACCTTTTGATGGTGTAG-TCGAAGTCCCTTATGACTCTTTG  
t14c8-15 AAGCTTCTTCTTGCTTCTGAAAGTTTTTGATGGTGTAGGT-GAAGTCCGTATGAGTGTTTG  
t14c8-16 AAGCTTCTTCTTGCTTCTCAAAGCTTTTGATGGTGACATC-GAAGTCCGTATGAGTCTTTG  
t14c8-17 AAGCTTCTTCTTGCTTCTCAAAGCTTTTGATGGTGTAGCG-GAAATCCGTATGAGTCTTTG  
t14c8-18 AAGCTTCTTCTTGCTTTTCAAAGCTTTTGATGGTGAAGCC-AAAGTCCGTATGAGTCTTTG  
t14c8-19 AAGCTACTTCTTGCTTCTCATAGCTTTTGATGGTGTAG-CCAAAGTCCGTATGAGTCTTTG  
t14c8-20 AAGCTTCTTCTTGCTTCTCAAAGCTTTTGATGGTGTAG-CCAAAGTCCGTATGAGTCTTTG  
t14c8-21 ----CTTCTTATTGCTTCTCAAAGCTTTTGATGGTGTAGCC-GAAGTCTTTATGAGTCTTTG  
t14c8-21 AAGCTTCTTCTTACTTTTCAAAGCTTTTGCTGGTTAG-CCGAAATCCGTATGAGTCTTTG  
t14c8-22 ----TTCTTTTGGCTTCTCAAACCTTTTGATGGTGAAGCC-GAAGTCTGTATGAGTCTTTG  
t14c8-23 ----TTGCTTCTCAAAGCTTTTGATGGTGTAGCC-GAAGTCTGTATGAGTCTTTG  
t14c8-24 AAGCTTCTTCTTGCTTCTCAAAGCTTTTGATAGTGACGTC-GAAGTCCGTATGAGTCTTTG  
t14c8-25 AAGCTTCTTCTTGCTTCTCAAAGCTTTTGATGGTGTAGCT-GAAGTCCGTATGAGTACTTG  
t14c8-26 AAGCTTCTTCTTACTTCCCAAAGCTTTTGATGGTGTAG-CCCAAGTCCGTATGAGTCTTTG  
t14c8-27 ----CTTCTTCTTGCTTCCAAAGCTTCGATGGTGAT-CCGAAGTCCGTATGAGTCTTTG  
t14c8-29 AAGCTTCTTCTTGTCTTAAAGCATTTGATGGTGAAGCC-AAAGTCCGTATGAGTCTTTG  
t14c8-28 ----TTGCTTCTCAAACCTTTTGATGGTGAAGCT-GAAGTCCGTATGAGCCTTTT

**FIG. 23B-1B**

GCTTTGTATCTT--CTAACAGGAAACACTACTTA-GCTTTT-A-----AGATCCGGTTGCTGTTCTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----G-AGCCGGTTGCGGTTCTA  
GCTTTGTATCTT--CTAACAGGAAACATACTTAGGCTTTC-A-----AGATCTGGTTGCGGTTATA  
GCTTTCATCTT--CAAACAGGAAACACTACTTAGGCTTTC-A-----AGATCCGGTTGCGATTCTA  
GATTGTATCTT--CTAACAGGAAACATTACATAGGATTTTAA-----G-ATTAGTTGCAGTTCTA  
GTTTGTATCTT--CTAACAGGAAACACAACCTTAGGCTTTT-A-----AGATCTGATTGCGGTTCTA  
GCTTTGTATCTT--CTAACAGGAAACATTACTTAGGCTTTTAA-----G-ATCCGGTTGCAGTTCTT  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAT-CTTTT-A-----AGATCCAGTTGTGGTTCTA  
GCTTTGTATCTT--CTAACAGGAAACAAATATTAGGCTTTC-A-----AGATCCGGTTGCGGTTCTA  
GTTTGTATCTT--CTAGCATGGAAACAAAACCTTAGGCTTTTA-----GGATCTGGTTGTGCTTCTA  
GCTTTGTATCTT--CTAACAGGTAACACTACTTAGGCTTTTAA-----G-ATCAGGTTGCAGTTTAA  
GATTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----G-ATCCAGTTGTGGTGCTA  
GCTTTGTATCTT--CTAACAGGAAACACTCCTTAGGCTATTAA-----G-ATC-AGTTGCGGTTCTA  
CCTTTCATCTT--CTAACAGGAAACACTACTTACGCTTTC-A-----AGATTCGCTTAAGGTTCTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----G-ATCCAGTTGTGGTGCTA  
GCTTTGTATCTT--CTAACAGGAAACAAATAATTAGGTTTC-A-----AGATCCGGTTGCGGTTCTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----A-ATCCGTTTGCAGTGCTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTCTAA-----G-ATCTCGTTGAGGTTCTA  
GCTTTGTATCTT--CTAGCATGGAAACACAACCTTAGGCTTTAG-----GGATTGCGTTGCGGTTCTA  
GTTTGTATCTT--CTAACTAGGAAACACTACTTAGGCTTTC-A-----AGATCGGATTGCGGTTCTA  
GCTTTCATCTT--CTAACAGGAAACACTACTTAGGCTTTC-A-----AGATCCGATTGTGATTCTA

FIG. 23B-2B



173 GTTTTACTCAATCATACATGATATCAAGTCAT--ATTGACTCCAAAACACTAACC  
175 GATCTTACTCAATCATACAACCTGACATCTAGTTAT--ATTGACTCCAAAATACTAACC  
170 GTTCTTACTTAATCATACATGACATATTGTCTAT--ATTGAGTCCGAAACACTAAC  
178 GTTCTTACTCAATCATACATGACGTCTAGTCTAT--ATCTGACCCCTAAAACACTAACC  
178 GTTCTTACTCAATCATACATGACATCTAGTCTAT--ATTGACTCCAAAACACTAACC  
178 GTTCTTACTCAATCATAGACATGACATCTAGTCTAT--ATTGACTGCAAAACAATAAACC  
178 GTTCTTACTCAACCATACAAAATGACATCTAGTCTAT--ATTGACTCCAAAATACTAACC  
177 ATTCTTACTCAATCATACATGAAATCTAGTCTAT--ATTGACTCCAAAACACTAACC  
177 GTTCTTAGACTTAATCATAGACATGACATATAGTCTAT--ATTATCTCCAAAACACTAAC  
177 GTTCTTATAATCAATCATACATGACATCTAGTCTAT--ATTGACTCTAAAACACTAAC  
180 GTTCTTACTCAATCATACATGACATCTAGTCTATCAAGTCATATTGACTCCAAAACA  
173 GTTCTTATACACAATCATACATGACATCTAGTCTAT--ATTTCATTCCAAAACACTAA  
175 GTTCTTACTCAATCATACATGACATCTAGTCTAT--ATTGACTCCAAAATCACTAA  
174 GTTCTTACTCAATCATACATGACATCTAGTCTAT--ATTGACTCCAAAAGCACTAACC  
166 GTTCTTATACAAAATCATACATGACATCTAGTCTAT--ATTTCATTCCAAAACACTAA  
177 GTTCTTACTCAATCATACATGACATGACATATAGTCTAT--ATTAACTCCAAAACACTAAC  
176 GTTGTCATACTCAATCATACATATAACATCTAGTCTAT--ATTGACTCCAAAACACTAA  
178 GTTCTTACTCAATCATACATGACATCTAGTCTAT--ATTGACTCCAAAACACTAA  
175 GTTCTTATACGCAATCAAAATACATGACATCTAGTCTAT--ATTGACTCCAAAACACTAACC  
178 GTTCTCATACTCATACATACATCATCTACTCTAT--ATTGACAAATAAAACACTAACC  
168 GATCTTACTCAATCATACATGACATCTAGTCTAT--ATATGACTCCAAAACACTAACC

FIG. 23B-3B

t14c8-3 AAGCTTCTTACTTCTCAAAGCTTTGATGGTGTAGCC-CAAGTCCGTATGAGTCTTTG  
t14c8-30 AAGCTTCTTTTGGCTTCTCAAAACCTTTGATGGTGACACC-AAAGTCCGTATGAGTCTTTG  
t14c8-31 AAGCTTCTTCTTGGCTTCTCAAAGCTTTGATGGTGTAGGT-GAAGTCCGTATGAGTGTTTG  
t14c8-32 AAGCTTCTTCTTGGCTTCTCAAAGCTTTGAAGACGTAGCC-AAAATCTATATGAGTCTTTG  
t14c8-33 AAGCTTCTTCTTGGCTTCTCCCAAAGCTTTGATGGTATAG-TCGAAATCCGTATGAGTCTTTG  
t14c8-34 AAGCTTCTTCTTGGCTTCTCCCAAAGCTTTGATCGTGAGCC-GAAGTCCGTATGAGTCTTTG  
t14c8-35 AAGCTTCTTCTTGGCTTCTCAAAGCTTTGATAGTGTAG-CTGAAGTCCGTATGAGTATTTG  
t14c8-36 AAGCTTCTTCTTGGCTTCTCAAAGCTTTGATGGTGAAG-CCAAAGTTCGTATAAAATATTTG  
t14c8-37 ---CTTCTTCTTGGCTTCTCAAAGCTTTGATGGTGAGCC-AAAGTTCGCATGAATATTTG  
t14c8-38 AAGCTTCTTCGTGCTTCTCAAAGCTTTGATGGTGTG-TCGAAGTCCGTAGGAGTCTTTG  
t14c8-39 -----TTG-----  
t14c8-40 AAGCTTCTTGTGCTTCTCAAAGCTTTGATGGTGTAGCC-GAAATCCGTATGAGTCTTTG  
t14c8-41 -----TTG-----  
t14c8-42 AAG-----TCCGTATGAGTCTTTG  
t14c8-43 AAGCTACTTCTTGGCTTCTCATAGTTTGTATGGTGTAG-CCATAGTCCGTATGAGTGTTTG  
t14c8-44 AAGCTTCTTCTTACTTCTCAAAACTTTGTATGGTGTG-TCAAAATCTGTATGAGACTTTA  
t14c8-45 -----  
t14c8-46 --GCTTCTTTTGGCTTCTCAAATAATTGATGGTGTATGGC-GAAGGCCGTATGAGTCTTTG  
t14c8-47 AAGCTTCTTTTACTTCTCAAAGCTTTGATGGTGTAG-CTGAAGTCCGTATGATCTTTG  
t14c8-48 A-----GTCTTTG

FIG. 23B-1C

GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----G-ATTCGGTTGCGGTTCTTA  
GCTTCTATCTT--GTAAATAAGGAAACATTAATTAGGCTTTC-A-----AGATCTGGTTGCGATTCTTA  
GTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----AGATCTGATTGCGGTTCTTA  
GCATTGTATCTT--CTAACACGAAACACTACTTA-GCTTTT-A-----AGATCCCGTTGCAGTTCTTA  
GATTGTATCTT--CTAACAGGAAACAGTTCTTAGGCTTTTAA-----G-ATTCGGCTGCG-TTCTTA  
GCTTTTATCTT--CTAACAGAACTAATACTTAAGCTTCC-A-----AGATCCGGTTGCGGTTATA  
GCTTTGTATATT--CTAACAGGAAACATTACTTAGGCTTTTAA-----G-ATCCAGTTATTGTTCTTA  
GCTTTGTATCTT--CTAACAGGAAACACTCTTTTAGGCTATTAA-----G-ATC-AGTTGCGGTTCTTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTC-A-----AGATCCGGTTGCGGTTCTT  
GATTGGTATCTT--CTAACAGGAAACATTACATAGGATTTTAA-----G-ATTAAATTGCGATTCTTA  
-CTTTGTATCTT--CTAACAGGAAACAACTACTTAGGCTTTC-A-----AGATCTGGTTGCGGTTCTTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTC-A-----AGATCCGGTTGTGGTTCTTA  
GATTTTATCTT--CTAACATGGAAACATCACAATAGGATTTTAA-----G-ATTACTTTGTAGTTCTTA  
-----TATATT--CTAACACGAAACACTACTTAGGCTTTC-A-----AGATCCGGTTGCGATTCTTA  
GCTTTGTATCTT--GACAAGGAAACACTACATAGGCTTTTAA-----G-ATCCTGTTGCGGTTCTTA  
GTTTGTATCTT--CTAGCATGGAAACAAACCTTAGGCTTTTAA-----GATCTAGTTGTGGTTCTTA  
GATTTGTTCTT--CTAACAGGAAACACTACATAGGCTTTCAA-----ATCCGGTTGTGGTTCTTA  
----TGATCTT--CTAGCATGGAAACACAACCTTAGGCTTTTAA-----GATCTGGTTGTGGTTCTTA  
GCTTCTATCTT--CTAACAGGAAACAATACTTAGGCTTTC-A-----AGATCCAGTTGCAATTCTTA  
GCTTTGTATCTT--TAACAACGAAACATTACTTAGGCTTTTAA-----G-ATCCTGTACGGTTCTTA  
GCTTTGTATCTT--CTAACAGGAAACACTACTT-TGCTTTT-A-----AGATTGGATGTGGTTCTTA

FIG. 23B-2C

178 GTTCTTACTCAATCATACAAATGACATCTAGTCAT--ATTGACTCCAAAACTACTAACC  
178 GTTCTGATACTCAATCATACAGATGACATCTATTTCAT--ATCTGACTCCAAAAACACTAACC  
179 GTTCTTATACTCAATCATAGACATGACATCTAGTCAT--ATTGACTGCAAAAACAATAACC  
177 GTTCTTATACTCAATAATACACATGACATCTAGTAAT--ATTAACTCCAAAAACACTAACC  
177 GTTCTTACACTCAATCATACACATGATATCTAGTCAC--ATTGACTCCAAAAACACTAACC  
177 GTTCTTATACTCAATCATACACATGACATATAGTCAT--ATTTCACCTCCAAAAACACTAACC  
177 GTTCTTTTACTTAATCATACACATGAAACCTAGTCAT--ATTGACTCCAAAAACACTAACC  
177 GTTCTTATACTCAATCATACACATGACATCTAGTCAT--ATTGACTCCAAAAACACTAACC  
171 GTTATCATACTGAGTCATACACATGATATCTACTCAT--ATTGACTCCAAAAACACT  
178 GTTCTTATAGTCAATTATACACATGACATCTAGTCAT--ATTGACTCCAAAAACACTAACC  
117 GTTCTTATAATTAAATCATACACATGACATATTGTTCAT--ATTTCACCTCCAAAAACACTAACC  
178 GTTCTTATACTCAATCATACACATGACATCTAGTCAT--ATTGACTCCAAAAACACTAACC  
178 GTTCTTATACTCAATCATACACATGACATCTAGTCAT--ATTGACTCCAAAAACACTAACC  
114 GTTCTTATACTGAATCATACACATGACATCTAGTCAT--ATCTGACTCCAAAAACACTAA  
134 GTTCTTATACTCAATCATACACATGACCTCTTGTTCAT--ATTGACTCCAAAAACACTA  
177 GTTCTTATAATCAATCATACACATGACATCTAGTCAT--ATTGACTCTAAAAAGACTAACC  
177 GTTCTTATACTGAATCATACACATGACATCTAGTCAT--ATTGACTCCAAAAACACTAACC  
113 GTTCTTATAGTCAATCATAGACATGACATCTAGTCAT--ATTGACTCCAAAAACACTAA  
176 GTTCTTATACTCAATCATACACATGACATCTAGTCAT--ATCTGACTCCAAAAACACTAACC  
176 GTTATTTATACTGAATCATACACATGACCTCTTGTTCAT--ATTTCACCTCCAAAAACACTAA  
126 GTTCTTATACTCAATCATACACATGACATATACTTCAT--ATTGACTTCAAAAAACACTAACC

FIG. 23B-3C

t14c8-49 AAGCTTTTGTGCTTCTCAACACTTTGATGGTGAAACC-GAAGTCCGTATGAGTCTTTG  
t14c8-5 ----TT-----GCTTCTCAAAACTTTGATGGTGAAAGCC-GAAGTCCGTATGAGTCTTTT  
t14c8-50 -----TTCTCAAAGCTTTGATGGTGAG-CCGAAGTCTGTATGATTCTTTG  
t14c8-51 AAGCTTCTTGTGCTTTTCAAAGCTTTGATGGTGAAAGCC-GAAGTCCGTATGAGTCTTTG  
t14c8-52 AAGCTTCTTCTTACTTCTCAAAGCTTTGATGGTGAG-CTGAAGTCCGTAGGAGTCTGTG  
t14c8-53 AAGCTTCTTCTGCTTCTCACAGCTTTGATGGTGTCG-TCGAAGTCCGTATGAGTCTTTG  
t14c8-54 -----  
t14c8-55 A-----GTCTTTG  
t14c8-56 AAGCTTCTTGTGCTTCCCAAAGCTTCGATGATGTAG-CCGAAGTCCGTATGAGTCTTTG  
t14c8-57 AAGCTTCTTGTGCTTTTCAAAGATTTGATACTGAAG-CTGAAGTCTATATGAGTTTTG  
t14c8-58 ---CTTCTTCTTCCCTTTCAAAGCTTCGATGGTGAG-CCGAAGTTCATATGAGTCTTTG  
t14c8-6 ---CTTCTTCTTGTGCTTCTCAAAGCTTTGATGGTGAGGC-AAAGTCCGTATGAGTCTTTG  
t14c8-7 ---TTCTTCTTGTGCTTCTCAAAGCTTTGATGGTGAGGC-AAAGTCCGTATGAGTCTTTG  
t14c8-8 ---TTCTTCTTGTGCTTCTCAAATCTTTGATGGTGATCC-GAAATCCGTATGAGTCTTTG  
t14c8-9 AAGCTTCTTGTGCTTCTCAAAGCTTTGATGGTATAT-TCGAAATCCGTATGAGTCTTTG  
t6c20-1 ---CTTCTTCTTGTGCTTCTCAAAGCTTTGATGGTGAGTC-AAAGTCCGTATGAGTCTTTG  
t6c20-10 ---CTTCTTCTTGTGCTTCTCAAAGCTTTGATGGTGAGTC-AAAGTCCATATGAGTCTTTG  
t6c20-11 ---CTTCTTCTTGTGCTTCTCAAAGCTTTGATGGTGAGTC-AAAGTCCGTATGAGTCTTTG  
t6c20-12 ---CTTCTTCTTGTGCTTCTCAAAGCTTTGATGGTGAGTC-AAAGTCCGTATGAGTCTTTG  
t6c20-13 -----CTTCTTGTGAGTC-AAAGTCCGTATGAGTCTTTG  
t6c20-14 ---CTTCTTGTGCTTCTCAAAGCTTCCACGGTGAGCC-AAAGTCCATATGAGTCTTTC

FIG. 23B-1D

GGTTCTATCTT--GTAATAAGGAAACATTATTAGGCTTTC-A-----AGATCCGGTTGCGATTCTA  
GCTTCTATCTT--CTAACAGAAACACTACTTAGGCTTTT-A-----AGATCGGGTTGTGGTTTAA  
GCTTGTATCTT--TAACAACGAAATATTACTTAGGCTTTTAA-----G-ATCCTTTACGGTTCTA  
GCTTGTATCTT--CTAAGAAGGAAACAATATTAGGCTTTC-A-----AGATCCGGTTGCG-----TA  
GCTGTGTATCTT--GACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCCTGTAGGGTTCTA  
GATTGTATCTT--CTAACAGGAAACATTAATAGGATTTTAA-----G-ATTAGTTGCGGTTCTA  
-----TGTATCTT--CTAGCATGGAAACACAACCTTAGGCTTTTAA-----GGATCTGGTTGCTTCTA  
GCTTGTATCTT--CTGAAAAGGAAACACTACTTAGGCTTTTAA-----G-ATCCAGTTACTGTTCTA  
GCTTTATACCTT--CTAGCATGGAAACACAACCTTAGGCTTTTG-----GGATCCAGTTGTTGTTCTA  
GCTTGTATCTT--TTAACAGGAAACAGTACTTAGGCTTTTCAA-----G-ATCCAGTTATTGTTCTA  
GCTCTGTATCTT--CTAGCATCGAAACAC-----AACTTTT--CCTCTTAAGATCTGATTGCGGTTCTA  
GCTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----G-ATCCGGTTGCGGTTCTA  
GCTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTC-A-----AGATCGGGTTGCGGTTCTA  
GCTTGTATCTT--CTAACAGGAAACACTACTTA-GCTTTT-A-----AGATCTGGTTGCGGTTCTA  
GATTGTATCTT--CTAACAGGAAACAGCTCTTAGGCTTTTAA-----G-ATTCGGTTGCGGTTCTA  
GCTTGTATCTT--CTAACAGGAAATCAGTACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTGTGTCTT--CTAACAGGAAACACTACTTAGGCTCTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTGTATCTT--TTAACAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTATAA-----G-ATCGGGTTGCGGTTTAA  
GCTTGTATCTT--CTAACAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTGTGTCTT--CTAACAGGAAATACTACTTAGGCTTTTAA-----G-ATAGGGTTGCGGTTTAA

FIG. 23B-2D

178 GTCTGATACTCAATCATACACATGACATCTATTCTAT--ACTTGACTCCAAAACACTAACC  
168 GTTGTTACTCAATCATACACATGACATCAAGTCTAT--ATATGACTCCAAAACACTAACC  
161 GTTCTTACTCAATCATACACATGACCTCTTGTCAT--ATTGACTCCAAAACACTA  
173 TTTCTTAGACTTAATCATATACATGACATATAGTCTAT--ATTATCTCCAAAACACTAAC  
174 GTTCTTACTCAATCATACACATGACCTTTTGTCAT--ATTGACTCCAAAACACTA  
178 GTTCTTACTGGATCATTAACCATGACATCTAAACAA--ATTGAGTCCAAAACACTAACC  
113 CTTCTTAGTCAATCATAGACATGACATCTAGTCTAT--ATTGACTCCAAAACACTAA  
127 GTTCTTTTACTCAATCAGACACATGAAGTCTAGTCTAT--ATTGACTCCAAAACACTAACC  
178 GTTCTTTATACGCAATCAAAATACATGATATCTAGTCTAT--ATTGACTCCAAAACACTAACC  
178 GTTCTTTTGCTCACCCATACACATGAAATCTAGTCTAT--ATTGACTCCATAACACTAACC  
166 GTTCTTTACTTAATCATAAACATGAAATCTAGTCTAG--ATTGTCTCCAAA  
175 GTTCTTTACTCAATCATATAAAATGACATCTAGTCTAT--ATTGACTCGAAAATACTAACC  
174 GTTCTCATACTCATTCATATACACATGACATCTACTCTAT--ATTAACTCTAAAACACTAACC  
173 GTTCCGATACTCAATCATACACATGATATCAAGTCTAT--ATTCAACTCCAAAACACTAACC  
178 GTTCTTACTCAATCATACACATGATATCTAATCTAT--ATTGACTCCAAAACACTAACC  
175 GTTCTTACTCAATCATACACATGACATCAAGTCTAT--ATTGACTCCAAAACACTAACC  
175 GTTATTTTCTCAATCATACACATGACATCAAGTCTAT--ATTGACTCCAAAACACTAACC  
175 GTTCTTACTCAATCATTCACATGACATCAAGTCTAT--ATTGACTCCAAAACGCTAACC  
175 GTTCTTACTGAATCATACACATGACATCAAGTTAT--ATTGACTCCAAAACACTAACC  
155 GTTTTACTCAATCATACACATGACATCAAGTCTAT--ATTGACTCCAAAACACTAACC  
174 GTTCTTACTCAATCATACACATGACATCAAGTCTAT--ATTGACTCCAAAACACTAAC

FIG. 23B-3D

t6c20-15 ---CTTCTTCTGCTTCTCAAAGCTTTCATGGTGTAACCAAAGTCCATATGAGTCTTTG  
t6c20-16 AAGTTCTCCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-GAAGTCTTTATGAGTCTTTG  
t6c20-17 ---TTCTTCTTGCTTCTCAAAGCTATGATGGTGTAAG-GAAGTCCATATGAGTCTTTG  
t6c20-18 ---CTTCTTGCTTCTCAAAGCTTTCACGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-19 AAGTTCTTCTAGCTTCTCAAAGCTTTCATGGTGTAATCC-AAAGTCCGTAATGAGTCTTTG  
t6c20-20 ---CTTCTTCTTGCTTCTCAAAGCTTTCACGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-21 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-AAAGTCTATATGAGTCTTTG  
t6c20-22 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGTC-AAAGTCCCTTATGAGTCTTTG  
t6c20-23 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-24 ---CTTCTTCTTGCTTCTCAAAGCATTCATGGTGTAACCAAAGTCCATATGAGTCTTTG  
t6c20-25 ---TTCTTCTTGCTTTTAAAGCTTTCATGTGTCGCC-AAAGTCCATATGAGTCTTTG  
t6c20-26 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGTGTAAGCC-AAAGTCCATATGAGTCTTAG  
t6c20-27 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-28 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-29 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-30 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-31 ---CTTCTTCTTGCTTCTCAAAGCTTTCACGGTGTAAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-32 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGTC-AAAGTCC---GAGTCTTTG  
t6c20-33 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGTAAGTC-AAAGTCC---GAGTCTTTG  
t6c20-34 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTATAG-CCAAATTCCATATGAGTCTTTG

FIG. 23B-1E



GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
TCTTTGTATCTT--CTAACAATGAAACTTTACTTTGGCTTTTAA-----G-ATCCGGTTGCGGTTTAA  
TCGTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAG-----G-ATAAAGTTGCGGTTTAA  
CCTTTGTGTCCTT--TTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATAGGGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTCTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTATAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTATAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTCTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTGTCCTT--TTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCAGGTTGCAGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCAACTTGCAGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGATACAAATCTTACGCCCTTAA-----G-ATCCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGAGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGAAACACTACTTAGGCATTAA-----G-ATCAGGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTATAA-----G-ATTAGGTTGGGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGCAACACTACTGAGGCTTATAA-----G-ATCGGGTTGCGGTTTAA  
GCTTTGTGTCCTT--TTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATAGGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGATGCGGTTTAA  
GCTTTGTATCTT--CTAACAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGGATGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAGGATACAAATCTTACGCCCTTAA-----G-ATCCGGTTGCGGTTTAA

FIG. 23B-2E

GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 178  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 174  
GTTGTTATACTCAATCATACACATGACATCAAGTCGT--ATTCTCCTCCAAACACTAACC 174  
GTTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 178  
GTTGTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 174  
GTTGTTTCTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
TTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
TTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
GTTGTTTCTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 174  
GTTGTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 176  
GTTGTTATACTCAATCATACACATGACATCAAGTCCT--ATTCTCCTC 162  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175  
GTTCTTATACTCAATTATACACATCACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 157  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 171  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 171  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTCTCCTCCAAACACTAACC 175

FIG. 23B-3E

t6c20-35 ---CTTCTTCTGCTTCTCAAAGCTTTCATGGTGTAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-36 ---CTTCTTTTGGCTTCTCAAAGCTTTCATGGTGTAGCC-AAAGCCCATATGAGTCTTTG  
t6c20-37 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAG-CCAAATTCATATGAGTCTTTG  
t6c20-38 ---CTTCTTCTTCCCTTCTCAAAGCTTTCATGGTGTAG-CCAAAGTCCATATGAGA-TTTG  
t6c20-39 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAA-CCAAAGTCCATATGAGTCTTTG  
t6c20-4 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-40 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAA-CCAAAGTCCATATGAGTCTTTG  
t6c20-41 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAA-CCAAAGTCCATATGAGTCTTTG  
t6c20-42 ---TTCCTTCTTTTAAAGCTTTCATGGTGTAGGC-AAAGTCCATATGAGTCTTTG  
t6c20-43 ---TTCCTTCTTTTAAAGCTTTCATGGTGTAGGC-AAAGTCCATATGAGTCTTTG  
t6c20-44 ---TCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-45 ---TTCCTTCTTTTAAAGCTTTCATGGTGTAGGC-AAAGTCCATATGAGTCTTTG  
t6c20-46 ---TTCCTTCTTTTAAAGCTTTCATGGTGTAGGC-AAAGTCCATATGAGTCTTTG  
t6c20-47 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAA-CCAAAGTCCATATGAGTCTTTG  
t6c20-48 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAG-CCAAAGTCGATATGAGTCTTTG  
t6c20-49 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAG-CCTAAGTCCATATGAGTCTTTG  
t6c20-5 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAGCC-AAAGTCCATATGAGTCTTTG  
t6c20-50 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAG-CCTAAGTCCATATGAGTCTTTG  
t6c20-51 ---CTTCTTCTTGGCTTCTCAAAGGCTTTCATGGTGTAGTC-AAATCCGATGAATCTTTG  
t6c20-52 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAA-CCAAAGTCCATATGAGTCTTTG  
t6c20-53 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAA-CCAAAGTCCATATGAGTCTTTG  
t6c20-54 ---CTTCTTCTTGGCTTCTCAAAGCTTTCATGGTGTAR-CCAAAKTCCATATRAGTCTTTG

FIG. 23B-1F

GCTTTGTGTCCTT--CTAACAAAGGAAACATTAAGGTTTAA-----G-ATCAGCTTGCGGTTTGA  
GCTTTGTGTCCTT--CTAACAAAGGAAACATTAAGGTTTAA-----G-ATCGGTTACGGTTTAA  
TCTTTGTGTCCTT--CTAACAAAGGATACAAATCTTACTCCTTAA-----G-ATCCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGCAACACTACTTAGGCTTATAA-----G-ATCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCGGTTGCGGTTAAA  
GTTTTGTGTCCTT--CTCACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCGGTTGCTGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCATTAA-----G-ATCGGTTGCAGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCGGTTGCGGTTAAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCAGATTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCAGGTTGCTGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTCTTAA-----G-ATCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCATTAA-----G-ATCAGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCAGGTTGCTGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCGGTTGCGGTTAAA  
GCTTTGTGTCCTT--CTAATAAGGATTCAATTCTTACGCCCTTAA-----G-ATCCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAATAAGGATTCAATTCTTACGCCCTTAA-----G-ATCCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTAA-----G-ATCAGCTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAATAAGGATTCAATTCTTACGCCCTTAA-----G-ATCCGGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAAGGAAACACTACTTAGGCTTATAA-----G-ATCGGTTGTGGTTTAA  
GCTTTGTGTTT--CTAACAAAGGAAACACTACTTAGGCATTAA-----G-ATTGGTTGCAGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCATTAA-----G-ATCGGTTGTAGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGATACAAATCTTACGCCCTTAA-----G-ATCCAGTTGCGGTTTAA

FIG. 23B-2F

GTTGTTATACTCAATCACACACATGACAAACAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTGTTATACTCAATCATACACATGACAAACAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTTTACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 174  
ATTCTTATACTCAATCATACACATGAGATCAAGTCAT--ATTGACTCCAAAACACTAAACC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 174  
ATTCTTATACTCAATCATACACATGAGATCAAGTCAT--ATTGACTCCAAAACACTAAACC 174  
GTTGTTATACTCAATCATACACATGACATCAAGTCCT--ATTGACTCCAAA 165  
GTTGTTATACTCAATCATACACATGACATCAAGTCCT--ATTGACTCCAAA 165  
GTTGTTTCTCAATCATACATATGACATCAAGTAAT--ATTGACTCCAAAACACTAAACC 173  
GTTGTTATACTCAATCATACACATGACATCAAGTCCT--ATTGACTCCAAA 165  
GTTGTTATACTCAATCATACACATGACATCAAGTCCT--ATTGACTCCAAA 165  
ATTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAA 172  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 174  
GTTCTTATACTCAATCATACACACGACATCAAGTCAT--ATTGACTCCAAAACACTAAACC 175

FIG. 23B-3F

t6c20-55 ---CTTCTTCTTGTCTCAAAGCTTTCATGGTGTAG-CCCAAGTCCATATGAGTCTTTG  
t6c20-56 ---CTTCACTTGTCTCTCAAGGCTTTCATGGTGTAGCC-AAAATCCGTATGAATCTTTG  
t6c20-57 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-58 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAGCC-AAAATCCATATGAGTCTATG  
t6c20-59 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-60 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAGCC-AAAATCCATATGAGTCTTTG  
t6c20-61 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-62 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-63 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-64 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-65 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-66 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-67 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-68 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-69 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-70 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAGCC-AAAATCCATATGAGTCTTTG  
t6c20-71 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-72 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-73 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-74 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-75 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-76 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-77 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-78 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG  
t6c20-79 ---CTTCTTCTTGTCTCTCAAAGCTTTCATGGTGTAG-CCAAAATCCATATGAGTCTTTG

FIG. 23B-1G

GCTTTGTGTCCTT--CTAACAAAGGATACAAATCTTACGCCCTTTAA-----G-ATCCAGATGCGGTTTAA  
GCTTTGTATCTT--CTAAGAAAGGAAACACTACTTAGGCTTATAA-----G-ATCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGATACAAATCTTACGCCCTTTAA-----G-ATCCAGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTTAA-----G-ATCAGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACWCAGGAAACACTACTTAGGCTTTTAA-----G-ATCAGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTATAA-----G-ATTGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACTCGGAAACACTACTTAGGCTTTTAA-----G-ATCAGTTGCGGTTTAA  
GCTTGGTGTCTT--CTAACACGGAACACTACTTAGGCTTTTAA-----G-ATTAGTTGCGGTTTAA  
GCTTGGTGTCTT--CTAACACGGAACACTACTTAGGCTTTTAA-----G-ATTAGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACACGGAACACTACTTAGGCTTTTAA-----G-ATCAGTTGCAGTTTAA  
GCTTGGTGTCTT--CTAACACGGAACACTACTTAGGCTTTTAA-----G-ATTAGTTGCGGTTTAA  
GCTTTGTATCTT--CTAACAAAGGAAACACTACTTAGGCTTATAA-----G-ATCGGTTGCGGTTTAA  
GCTTTATGTCTT--CTAACAAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGGTTGCGGTTAAA  
GCTTTGTATCTT--CTAACAAAGGAAACACTACTTAGGCTTATAA-----G-AT-----TTGCGGTTTAA  
GCTTTGTGTCCTT--CTAATAAGGATACAAATCTTACGCCCTTTAA-----G-ATCCGTTGCTGTTTAA  
TCTTTGTGTCCTT--CTAACAAAGGATACAAATCTTACTCCTTTAA-----G-ATCCGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGAAACACTACTTAGGCTTTTAA-----G-ATCAGCTTGCAGTTTAA  
GCTTTGTGTCCTT--CTAACAAAGGATACAAATCTTACGGCTTTTA-----AGATCGGTTGCGGTTTAA  
GCTTTGTGTCCTT--CTAACACGGTAACACTACTTAGGCTTTTAA-----G-ATCAGTTGCGGTTTAA  
TATTTGTATCTT--CCAACAAGGAAACACTACTTAGGCTTTTAA-----GGATAAAGTTGTGTTTAA  
GCTTTGTATCTT--CTAACAAAGGAAACACTACTTAGGCTTTTAA-----G-ATCGAGTTGCGGTTTAA

FIG. 23B-2G

GTTCTTATACTCAATCATACACGACATCAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACATGACATTAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACGACATCAAGTCAT--ATTCAACTCCAAACACTAACC 175  
GTTGTTATACTCAATCATACACATGACATCAAGTCCT--ATTGACTCCAAA 146  
GTTGTTATAATGAATCTTACACATGACAAACAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTGTTATAATGAATCTTACACATGACAAACAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTGTTATAATGAATCTTACACATGACAAACAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTGTTATAATGAATCTTACACATGACAAACAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTGTTATAATGAATCTTACACATGACAAACAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCGCGCAA 166  
ATTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 174  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCTAAACCACTAACC 171  
GTTCTTATAATCAATCATACACATGACATCAAGTCAT--ATTGACTCACAACACTAACC 175  
GTTCTTTTACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAACACTAAC 134  
GTTGTTATACTCAATCATACACATGACAAACAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTCTAAATACTCAATCATACACATGACATTAAGTCAT--ATTGACTCCAAACACTAACC 175  
GTTGTTATAATGAATCTTACACATGGCATCAAGTCAT--ATTGACTCCAAACACTAACC 163  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 179  
GTTCTTATACTCAATCATACACATGACATCAAGTCAT--ATTGACTCCAAACACTAACC 178

FIG. 23B-3G



**FIG. 23C-1A**

CTTTGTATCTTAACAAGGAAACACTACTTAGGCTTTTAAAGATCC-GGTTGCGGTTCTAGTTCCTTATAC 70 80 90 100 110 120 130  
CTTTGTGCTTTAACAAGGATACACTACTTAGGCTTACAAGATCG-GGTTGYGGTTTAAGTSTTATAC  
CTTTGTGCTTTAATAAGGATACAAATTCTTACGCCCTTTAAGATCC-GGTTGCGGTTTAAGTCTTATAC  
CTTTGTGCTTTAACAAGGATACAAATTCTTACGCCCTTTAAGATCG-GCTTGCGGTTTAAGTCTTACAC  
CTTTGTGCTTTAACAAGGACACAAATTCTTACGCCCTTTAAGATCC-GGTTGCGGTTTAAGTCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTACTTAGGCTTTAAGATCC-GGTTGTGGTTCTAGTTCCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTACTTAGGCTTTCAAGATCT-GGTTGTAGTTCGAGTTTATAC  
CTTTGTATCTTTAACAAGGAAACACTACTTAGGCTTTAAGATCC-GGTTGCAATTCTCGTCCCTTATAC  
CTTTGTATCTTTAATAAACAATACTACTTAGGCTTTAAGATCC-GGTTGCGGTTCTAGTTCCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTACTTAGGATTTAAGATCG-GGTTACAGTTCAGTTCCTTATAC  
CTTTGTACCTTTAATAAGGAAACACTACTTGACTTTCAAGATCC-GGTTGCGGTTTCGAGTTCCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTAAATTGGGTTTTAAGATCC-GGTTGTGGTTCTAGTTCGTATAC  
CTTTGTGCTTTAACAAGGATACAAATCTTACGCCCTTTAAGATCC-GGTTGCGGTTTAAGTTCCTTATAC  
ATTTGTATCTTTAACAAGGAAACACTACTTGGGCATTTCAAGATCC-GATTGCGGTTTGAGTATTTATAC  
CTTTGTACCTTTAATAAAGGAAACACTACTTGGGCTTTCAAGATCC-GGTTGTGGTT-GAGTTCCTATAC  
ATTTGTATCTTTAACAAGGAAACACTAACTAGGCTTTTAAGATCG-GGTTGCAGTTCAGTTCCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTACTTAGGCTTTAAGATCG-GGTTGCAGTTCAGTTCCTTATAC  
-TTTGTATCTTTAACAAGGAAACACTACTTAGGCTTTAAGATCT-GGTAGTGGTTCTAGTTCCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTACTTGGGCTTTCAAGATCT-GGTTACGGTTTGAGTTCCTTATAC  
CTTTGTATCTTTAACAAGGAAACACTAGTTGGGCTTTCAAGATCC-GGTTGCGGATTTGAGTTCCTTATAC  
CTTTGTATCTTTCTAAA-----TACTACTTAGGCTTTTAAAGATCC-GGTTGCGGTTCTAGTTCCTTATAC

FIG. 23C-2A

TC-AATCATACATGACATCAAGTCATATTTGACTCCAAAACACTAACC 140 150 160 170 180  
TC-AATCATACATGACATCAAGTCATATTTGACTCCAAAACACTAACC 175  
TC-AATCATACATGACATCAAGTCATATTTGACTTTAAAACACTAACC 175  
TC-AATCATACATGACATCAAGTCATAATCGACTCCAAAACACTAACC 175  
TC-AATCGTACATGACATCAAGTCATATTTGACTTTAAAACACTAACC 175  
TC-AATAATACATGACATCAAGTCATATTTGACTCTAAAACACTAAC 177  
TA-AATCATAGACATGCCATCTTGTCTATATTTGACTCCAAAACACTAACC 178  
TCCA-TCATACATGACATCAAGTCATATTTGATTCCAAACACTAACC 178  
CC-AATCATACATGACATCAAGTCATATTTGACTCGAAAACACTAACC 178  
TCAA-TCATACATGAAATCTAGTCATATTTGACTCCAAAACACTAACC 178  
TC-AATCATACATGTCATCTAGTCATATTTGTCTCCAAAACACTAACC 176  
TC-AATCATACATGACATCAAGTCATATTTGACTCTAAAACACTAAC 140  
TC-AATCATACATGACATCAAGTCATATTTGACTCCAAAACACTAACC 175  
TC-AATCATACATGTCATCTAGTCATATTTGACTCCAAAACACTAACC 175  
TC-AATCATACATGCCATCTAGTCATATTTGACTTCAAAAACACTAACC 177  
TCAA-TCATACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 173  
TCAAATCATACATGAAATCTAGTCATATTTGACACCCAAAATACTAACC 179  
TC-AATCATATACATTACATCAAGTCATATTTGACTCTAAAACACTAAC 172  
TC-AATCATACATGCAATCTAGTCATATTTGGACTCCAAAACACTAAC 152  
TC-AATCATACATGTCTCTAGTCATATTTGACTCCAAAA 170  
CC-AATCATACATGACATCAAGTCATATTTGACTCGAAAACACTAACC 171

FIG. 23C-3A

**FIG. 23C-1B**

CTTTGTATCTTCTAAAGGGAACACTAACTAGG-TTTTAAAGATCG-GGTTGCAGTTCAGTTTCTTATAC  
CTTTGTATCTTCTAAATAAATACTACTTTAGG-TTTTAAAGATCC-GGTTGCCGTTATAATTCTTATAC  
CTTTGTGCTTCTAACAACGATACACTACTTAGGCTTACAAGATCG-GGTTGCCGTTTAAAGTTGTTATAC  
-TTTGTATCTTCTAACAAGGAACACTACTTAGACTTTTAAAGATCC-GGTTGTGGTTCTAGTTCCTTATAC  
CGTTGTATCTTCTAACAAGGAACACTACTTTGGGCTTTCAAGATCC-AGTTGCCGTTTCGAGTTCCTGTAC  
CTTTGTATCTTCTAACAAGGAACACTACTTTGGGCTTTTAAAGATCC-AGTTAAGGTTCTAGTTCGTATAC  
CTT-GTATCTTCTAACAAGGAACACTACTTAGGCTTTAAAGATCC-GATTCGAAATTCCTTGCTCCTGATAC  
CGTTGTATCTTCTAACAAGGAACACTACTTTGGGCTTTCAAGATCC-AGTTGCCGTTTCGAGTTCCTGTAC  
CTTTGTATCTTCTATCAAGGAACACTATTTGGGCTTTCAAGATCC-GGCTGTGGTTTGAGTTCCTTATAC  
CGTTGCATCTTCTAACAAGGAACACTACTTTGGGCTTTCAAGATCC-AGTTGTGGTTTCGAGTTCCTGTAC  
---TGTATGTTCTAACAAGGAACACTATTTAGGCTTTCAAGATCT-GGTTGCCAATCTAGTTCCTTATAC  
CTTTGTCTGTTCTAACAAGGAACACTATTTGGGCTTTCAATATCC-GGTTGCCAATCTAGTTCCTTATAC  
CTTTGTATCTTCTAACAAGGAACACTACTTTGGGCTTTTAAAGATCC-GGTTGTGGTTCTAGT---ATAC  
CTTTGTCTTCTAACAAGGATACAAATCTTACGCCCTTAAAGATCG-GGTTGCCGTTTAAAGTTCCTTATAC  
CTTTGTATGTTCTAACAAGGAACACTATTTGGGCTTTCAAGATTA-GGTTGTAGTTCGAGTTCCTTATAC  
CTTTGTATCTTCTAACAAGGAACACTACTT  
---GTATCTTCTAATAAAGAAATACTACTTAGGCTTTTAAAGATCC-GGTTGCCGTTCTACTTCTTATAC  
CTTTGTATCTTCTAGCATGGAAAAAATAATTTGCTTTTGGGATCC-GTTTGTAGTTTAAAGTTCCTAATAC  
CTTTGTATCTTCTAATAAAGAAACACTACTTCGGCATTTCAAGATCC-GGTTGCAGTTTGAAATTCCTTATAC  
CTTTGTATGTTCTAACAAGGAACACTATTTGGGCTTTCCGGGATTA-GGTTGTAGTTCGAGTTCCTTATAC  
CTTTGTATCTTCTCGCATGGAAACTCTACTTTTCCTTTTCGGGATCC-GTTTGCCGTTCAAGTTCCTAATAC  
TTTTGTATCTTCTAGCATGGAAACACTACTT

FIG. 23C-2B

TCAA-TCATACATGACATCTAGTCATATTGACTCCAAAACACTAACC 173  
CC-AATCATACATGACATCAAGTCATATTGACTCCAAAACACTAACC 177  
TC-AATCATACATGACATCAAGTCATATTGACTCCAAAACACTAACC 175  
TC-AATCATACAGATTACATCAAGTCATATTGACTCTAAAACACTAAC 116  
TC-AATCATACATGACATCTAGGCATATTGACTCCAAAACATAAACC 154  
TC-AATCATACATGACATCAAGTCATATTGACTCTAAAATACTAAC 177  
TCCA-TCATACATGACATCAAGTCATATTGACTCCAAAACATAAACC 177  
TC-AATCATACATGCCATCTAGGCATATTGACTCCAAAAC 148  
TC-AATCATACAAATGACATCTGGTCATATTGACTGAAAACACAAACC 178  
TC-AATCATACATGCCATCTAGGCATATTGACTCTAAAACA 168  
T-TAATCATACACAGGACATCAATTTCATATTGACTCCAAAACACTAACC 118  
T-AAATCATACACAGGACATCAATTTCATATTGACTCCAAAACACTAACC 172  
TC-AATCATACATGACATCAAGTCATATTGACTCTAAAACACTAAC 174  
TC-AATCATACATGACATCAAGTCATATTGACTCCAAAACACTAACC 174  
T-AAATCATACATGTGCTGTGGACATATTGACTCCAAAACACTAACC 178  
88  
CC-AATCAAAAACATGAAATCAAGTCATATTGATTCCAAAAAACTAACC 114  
TT-AAACATACACATGACATAAAGTCATATTGACTCCAAAACACTAACC 118  
TC-AATCATATA 111  
T-AAATCATACAAATGTCGTCTGGTCATATTGACTCCAAAACACTAACC 174  
TC-AACCATAGACATGACATCAATTTATATCTAACTCCAAAACACAAACC 138  
91

FIG. 23C-3B

t25f15-48 AAGCTTCTTCATGCTTCCTAAGGCTTTGATGGTGATGTCGAAGTCCTTATGAATCTTTTG  
t25f15-49 AAG-----TCCGTATGAGTCTTTGG  
t25f15-50 ---CTTCTTCTTGCTTCTCAAAGTTTTCATGGTGAGCCAAAGTCAATATGAGTCTTTGG  
t25f15-51 A-GCTTCTTCATGCTTCCTAAGGCTTTGATGGTGATGTCGAAGTCCTTATGAATCTTTTG  
t25f15-52 -----TATGAGTCTTTGG  
t25f15-53 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGAGCCAAAGTCCATATGAGTCTTTGG  
t25f15-54 ---TTCTTCTTGCTTCTCAAAGCTTTCATGGTGAGCCAAAGTCAATATGAGTCTTTGG  
t25f15-55 ---CTTCTWCTTGCTTCTCAAAGCTTTCATGGTGAGCCAAAGTCCATATGAGTCTTTGG  
t25f15-56 ---CTTCTTCTTGCTTCTCAAAGCTTTCATGGTGAGCCAAAGTCCATATGAGTATTTGG

FIG. 23C-1C

CTTTGTATCTTAGCATGGAAACACTACTT  
CTTTGTATTTCTGGCATGGAAACACTACTTTTCCCTTTTGGATCC-GTTTGCGGTTCAAGTCTAATAT  
CTTTGTGCTCTTAACAAGGATACACTACTTAGGCTTATA-GATCA-GGTTGCGGTTTAAGTCTTATAC  
CTTTGTATCTTAGCATGGAAACACTACTT  
CTTTGTATCTTAGCATGGAAACACTACTTTTCCCTTTTTCAGATCC-GTTTGCGGTTCAAGTCTAATAT  
CTTTGTGCTCTTAACAAGGATACAAATCTTACGCCTTTAAGATCC-GGTTGCGGTTTAAGTCTTATAC  
CTTTGTGCTCTTAACAAGGATACACTACTTAGGCTTACAAGATCG-GGTTGCGGTTTAAGTGTATAC  
CTTTGTGCTCTTAACAAGGATACAAATCTTACGCCTTTAAGACCG-GGTTGAGGTTTAAGTCTTATAC  
CTTTGTGCTCTTAACAAGGATACATCTCTTACGCCTTTAAGATCT-GGTTGCGGTTTAAGTCTTATAC

**FIG. 23C-2C**



91  
TC-AACCATAGACATCACATCAGTCTTATATTAACTCCAAACACAAACC 138  
TC-AATCATACACATGACATCAAGTCATATTTCGACTCCAAACACTAACC 174  
90  
TC-AACCACAGACAGGACATCAATTTATATTAACTCCAAACA 125  
TC-AATCATACACATGACATCAAGTCATATTTCGACTTTAAACACTAACC 175  
TC-AATCATACACATGACATCAAGTCATATTTCGACTCCAAACACTAACC 174  
TC-AATCATACACATGACATCAAGTCATATTTCGACTCCAAACACTAACC 175  
TC-AATCATACACATGACATCAAGTCATATTTCGACTTTAAACACTAACC 175

**FIG. 23C-3C**

	10	20	30	40	50	60
	AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTAGCCGAAAGTCCGATGAGTCTTTGG					
f21i1-37	AAGCTTCTTCTTCTCACTGCTTTGATGGTGTAGCCGAAAGTCCGATGAGTCTTTGG					
f21i1-71	AAGCTTTTATTGCTTCTCAAAGCTTTGATAGTGTAGCCGAAAGTCCGATGAGTCTTAGG					
f21i2	AAGCTTCTTTTGGCTTTCAAAGCTTTGATGGTGTAGCAGAAAGTCCGATGAGTCTTTGG					
f21i2-1	---TTCTTATTGCTTCTCAAAGTTTTGTAGTGGTGTAGCCGAAATCCGATGAGTCTCTAT					
f21i2-10	AAGCTTCTTCTAGCTTCTCAAAGTTTTGTAGTGGTGTAGCCGAAAGTCCGATGAGTCTTTGG					
f21i2-100	AAGCTTCTTATTGCTTCTCAATATTTTCATGGTGTAGCCGAAAGTCCGATGAGTCTTTGG					
f21i2-101	-----TATGAGTCTTTGG					
f21i2-102	AA-----					
f21i2-103	-----CTTTGATGGTGTAGCCGATGTCCTCGATGACTCTTTGG					
f21i2-104	---CTTCTTGTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCTGTATGAATTTTGG					
f21i2-105	AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTAGCCGAACTCTATATGAGTCTTTG					
f21i2-106	AAGCTTCTTCTTGTCTCAATGCTTTGACGGTGTACCAAGTCCGCGTGAATCTTCGT					
f21i2-107	AAGCTTCTTATTGTTTCTCAAACCTTTTATGGTGAAGCCAAAGTCCGATGAGTATTTGG					
f21i2-108	AAGCTTCTTCATGCTTTTCAAAGCATTTGATGGTGAAGCCAAAGTCCGATGAGTCTTCGG					
f21i2-109	AAGCTTTTCTTGTCTTGTCAAAGCTTTTGTGGTGTGCTGAGTCCGATGAGTCTTTGG					
f21i2-11	AAGCTTCTTATTACTTCTCAAAGCTTTGATGGTGTAGCCGAAAGTCCGATGAGTCTTTGG					
f21i2-110	A-GCTTCTTCATGCTTCTCAAAGCTTATATGCTGTAGCCAAAGTCCGATGAGTCTTTGG					
f21i2-111	AAGCTTGTCTTGTCTTCAATGCTTTTCATGGTGTAGCCGAAAGTCCGATGAGTCTAAGG					
f21i2-112	-----TATGAGTCTTTGG					
f21i2-113	-----TCTTGTGCTTCTTAAAGCTTTGATGGTGTAGCCGAAAGTCTGTATGAGTTTTTGG					

FIG. 23D-1A

CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAACCGGTTGCGGTTCTAGTTC 70 80 90 100 110 120 130  
CTTTGTCTCTTCTAA-CAAGGAAACACTACTTT-----ACCTTTTGGGATCCGGTTGCGGTTCTAATTC  
CGTTGTATCTTCTAA-TAAGGAACCACTACTTT-----AGCTTTTGGAAACCAAGTTGCGGTTCTAGTTC  
CTTTGTATCCTTCTAA-CAACGAAGCAATACTTT-----AGCTTTTTCGGAACCGGTTGCGGTTCTATTCC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAACCAAGTTGCGGTTTAGTTC  
CTTTGTATCTTCTAA-TAAGGAAACACTATTT-----AGCTTTTGGGAACCGGTTGCGGTTATAGTTC  
CTTTGTATCTTCTAA-CAAGGAAAAAATACTTT-----ATCTTTTGGGAACCGACTGCCGATTCCAGTTC  
CTATGTATCTTCTAA-CAAGGAAAATACTACTTT-----AGCTTTTGGGAACCGGTTCCGGTTCTAGTTC  
-----CAAGAAAAACAC-----TACTTAGGCTTTTAAGATCTTGTGCGGTTCTAGTTC  
TTTTGTATCTTCAAA-CAAGGAAACATTACTTT-----AGCTTTTGGGAATTGGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAG-AAGGGAACACAACTTT-----AGCTTTTGGGAATCAGTTGTGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAGATACTACTT-----AGGCTTTCAAGATCTAGTTAAGATTCTACTTC  
CTTTGTATCTTCAAA-CAAGGAAATAC-----AAGTTAGCTTCTGGGATCCGGTTGCAGTTCTAGTTC  
CTTTCTATCTTCTAA-CAAGGAAACACTACCTT-----ACCTTTTGGGAACCGATTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-CCAGGAAACAC-----TAATTAGCTTTTGGGATCTTATTGCGGCTCTAGTTC  
ATTTGTATCTTCAAA-CAAGGAAACACTACTTT-----GGCTTTTGGGAACCAAGTTGCGTTTCTAGTTC  
CTTTGTATCTTGTA-CAAGGAAACACTACTTT-----AGCCTTTGGAAACCGGTTGCGGTTCTAGTTC  
CTTTGTATCTCCTAA-CAAGGAAACACAACTTT-----AACTTTTCGGAACCGGTTGTGGTTCTAGGTC  
CTTTGTATCTTTTAA-CAAGAAACACTAAATTT-----ACATTTTGGGATCCTTTTTCGCGGTTCTAGTTC  
TTATGTATTTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGATCCGTTTTCGCGGTTCTATATC  
CTTTGTATCTTCTAG-AAGGGAACATTACTTT-----AGCTTTTGGGAAGATGTTGCGGTTCTAGTTC

FIG. 23D-2A

TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAAACC	140	150	160	170	180	
TCATACTCAATTATACAAATGACATCTAGTCATATTTGACTCCAAGACAC						173
TTATACTCCATCATACACATGACATCTAGTCATATTTGACTCCAAAATACTAAACC						178
TTATACTCAATCATACACATGACATCTCGTCATATT						159
TTATGCTCAATCATACACATGACATCAAGTCATATTTGACTCCAAAACACTAAACC						174
TTATACTCAATCATACACATGACATATAGTCATATTTGAATCCAAAACACT						174
TTATACTCCATCATACACATGACATCTAGTCATATTTGACTCTAAAACACTA						175
TTATACTCAATCATACAAATGACATCTATTCATATTTGTCTCCAAAACACTAAACC						131
TCATACTCAATCATACACATGAGATCAAGTTATATTTGACTCCCAAACACTAA						103
TTATACTCAATGATACACATGACATCCGTGTAATATTTGACTCTAAAATACTAAACC						155
TTATACTTAATCAAACACATAAACATCTAGTCATATTTGACTCCAAAACACTAAC						174
TTATACTCACTCAAACACATGACATGTGTCATATTTGACTCTGAAAACAATAAACC						178
TTATACTCAATCATACACATGACCTCTAGTCATATTTGAATCCAAAACAGTAACC						178
TTATACTCAATACTATACATGACATATAGTCTTATTTGACTCCAAAACACTAAACC						178
TAATACTCAATCACACACATGACATCTAGTCATATGTGACACCCAAAACACTAAACC						178
TTATACTCAATCATACACATGACAAGTAGTCGTATGTGGCTTCAAAAACACTAAACC						178
TTATACTCAATCATCCACATGACATCTAGTCATATTTGACTCCAAAACACTAAACC						178
TTATACTCAATCATATAAATGACATCCAGTTATATTTGACTGGAAAACACTAAACC						177
TTATACTCAATCATACAAATGACATCTAGTCATATTTGACTCCAAAGACAC						173
TTATACTCAATCATACACATGACATCGAGTCATCTTTGACTCCAAAACACTAA						129
TTATACTCAATCAAACACATAAACATCTTGTCTTATTTGACTCCAAAATACTAAACC						173

FIG. 23D-3A

f21i2-114 --GCTTCTTAATGCTTCCCAAACCTTTATGGGTAGCCAAAGTCCGTATAAGTCTTTGG  
f21i2-115 AAGCTTCTTCTTCTCATAGATTGATGGGTAGCCGAAGTCCGTATTAGTCTTTGG  
f21i2-116 -----TTGCTTCTCAAAAATTGATGGGTAGCCGAAGTCCGTATGCGTCTTTGG  
f21i2-117 ----TTCCTTATTGCTTCTCAAGCTTTGATGGGTAGCCGAAGTCCGTATGTATTAG  
f21i2-118 ---CTTCTTATTGCTTCTCAAAATTGATGGGTATCCGAAGTCTGTAGAGTTTTGG  
f21i2-119 ---CTTCTTATTGCTTCTCAAGCATTTGATGGGTAGCCGATCTGTATGTCTTTGG  
f21i2-12 AAGCTTCTTATTGCTTCTCAAGCTTTGATGGGTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-120 AAGCTTCTTTTGGCTTTTCAAGCTTTGATGGGTAGCAGAGTCCGTATGAGTCTTTGG  
f21i2-121 ---CTTCTTCTCGCTTCTCAAGATTGATGATGTTTCCAAAGTCCGTGTAATCTTCCG  
f21i2-122 -----CTTGTGGTGTAGCCGATGTCCTGATGAGCCTTTGG  
f21i2-123 -----  
f21i2-124 -----  
f21i2-125 AAGCTTCTTATTGCTTCTCAAGCTTTGATGGTGAAGCCGAAGTCCGTACGAGTCTTTGG  
f21i2-126 AAGCTTATTTTGGCTTCTCAAGCTTTGATGGGTAGCCGAAGTCTATATGAGTCTTTG  
f21i2-127 AAGCTTCTTCTTGGCTTCTCAAGCTTTGATGGGTAGCCGAAGTCTTGTATGAGTCTTTG  
f21i2-128 AAGCTTCTTATTGCTTCTCATAGCTTTGATGGGTAGCTGAAGTCCATATGATTTCTTTGG  
f21i2-129 AAGCTTCTGCTTGGCTTCTCAAGCTTTGATGGGTGTTGCCGAATTCAGTATGTGTCTTTGG  
f21i2-13 AAGCTTCTTCTTGGCTTCTCAAGTTTTGTATGGGTGTTGCCATAGTCCGTGTAATCTTCGT  
f21i2-130 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGGTAGCCGAAGTCCGTATGTGTCTTTGG  
f21i2-131 AAGCTTCTTCTTGGCTTCTCAATGCTTTGATGGGTAGCCGAAGTTCGTATGAGTCTTTGG  
f21i2-132 A-----  
f21i2-133 -----T-GCTTCTTAAAGCTTTGATGGGTAGCCGAAGTCCCTTATGACTTTTTGG

FIG. 23D-1B

ATTGTATCTTTAT-AAAGGAAACATTACTTT-----CGCTTTTGGGAATTGGTTGCCGGTCTAGTTC  
ATATGCATCTTCTAA-CAAGGAAACACGTCTT-----TCGCTTTTAAAGATCCGGTTGCCGATCTAGTTC  
CTTTGTATCTTCTAA-CAAGAAACACTACTTT-----AGCTTTTGGGAACCAAGTTGCAGTCCCTAGCTG  
CTTTGTATCTTCAAA-CAAGGAAACATTACTTT-----AGCTTTTGGGAATCAGTTGCCGGTCTAGTTC  
CTTTGTATCTTCTAA-TAGGAAACATAACTTT-----AGCAATTGGGAATCGGTTGCCGGTCTAGTTC  
CTTTGTATCTTCTAA-CGAGGAAACCTACTTT-----AAGTTTGTGGAACCGGTTGCCGGTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCCCTTGGGAACCAAGTTGCCGGTTTAGTTC  
CTTTGTTCCTCTAA-CAAGGAAGCAATACTTT-----AGCTTTTCGGAACCGGTTGCCGGTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGGTACAC-----TAATTAAGATTTGGGATCCGGTTGCCGATTTTAGTTC  
TTTTGTATCTTCAAA-CAAGGAAACATTACTTT-----AGCTTTTGGGAATTGGTTACGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATTACTCT-----AGCTTTTAGGAATCGGCTGCCGGTTCTAGTTC  
-----TTGCCGGTTTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATTACTTA-----AGCTTT  
CTTTGTATCTTCTAA-CAAGGAGATACTACTT-----AGGCCTTCAAGATCCAGTTGAGATTCTAGTTC  
CGTTGTATCTTCTGA-CAAGGAGATACTACTT-----AACCTTTGGGAACCGGTTGTGGTTCTAGGTC  
CTTTGAATCTTCTAA-TAAGGAAACACAACTTT-----TTCTTAAGGTTTAAAGATCCGGTTGCCGGTTCTAGTTC  
GTTTGTATCTTCTAA-CAAGGAAACAC-----TACTTTAGCTTTTAGGATCTTGTGCGGATTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTAAATT-----TGCTTTTGGGAACCAAGTTGCCGGTTCTAGTTT  
CTTTGTCTCTTCTAA-CTACGAAACATTACTTT-----ACCTTTTGGAAATCCGATAGCGGTTCTAATTA  
-----TACTTAGGCTTTTAAAGACCCGGTTGCAGTTCTAGTTC  
CTTTGTATCTTCTAG-AAGGAAATATTACTTT-----AGCTTTTGGGAAGATGTTGCCGGTTCTAGTTC

FIG. 23D-2B

TTATACTCAATGATTCACATGACATCATGTAATATTTGACTTCAAAATACTAACC 176  
ATATACTCAAACATACACATGATATCTAGACATATTTGACTCCCAAACACTAA 176  
TTAAACTCAATCGTACACATGACATCTAGTCATATTTAACTCCAAAACACTAACC 168  
TTATACTCAATCATACACACGACAT 144  
TTATACTCAATCATACACATGACATCTAGTCATATTTGATTCCAAACACTAACC 175  
TTATAGTCAATCATACACATGACATCTTGTCTACTTGTGACTCCAAAACATTAACC 175  
TTATACTCAATCATCCACATTAACATCTAGTCATATTTGACTCCAAAA 170  
TTATACTCAATCATACACATGAAATCTCGTCATAT 159  
TTATAATCAATCATACACATGACCTCCAGTCATATTTGAATCCAAAACAGTAACC 175  
TTATACTCAATGATACACATGACATCCTGTAAATATTTGACTCTAAAAATACTAACC 155  
CTATACTCAATCATACACATGACATATAGTCATATTTGACTCTGAAAACACTAACC 118  
TTATACTCAATAATACACATGACATCTAGTCATATTTGACTCCAAAATACTAACC 70  
98  
98  
TTATACTCAACCATACACAGGACATATCGTCATATTTGACTCTGAAAACACTAACC 178  
TTATAGTCAATCATATAAAAGACATCTAGTCATATTTGACTCGAAAACACTAACC 178  
TTATACATAATGTTACACATGAGATCTAGTCATATTTAGATACCAAACACTTAACC 178  
TTATACTCAATCATACACATGACCTCTAGTCATATCTGAATCCAAAACAGTAACC 178  
TAATACTCAATACTACACATGACATATAGTCTTTTGTGACTCCAAAACACTAAC 177  
TTATACTCAATCATACAAATGACATCTAGTCATATTTGACTCCCAAGACAC 173  
TTATACTCAATCATACAAATGACATCTACTCTCATATTTGACTCCAAAACACTAACC 96  
TTATACTCAATCAAACACACATAACATCTTGTCTTATTTGACTCCAAAATACTAACC 167

FIG. 23D-3B

f21i2-134 -----TATGAGTCTTTGG  
f21i2-135 AAGCTTCTTATTGCTTTTCCAAGCTTTGATGGTGTAGCCGAAGTCCGATAGAGTCTTTTG  
f21i2-136 -----  
f21i2-137 ---CTTCTTGTGCTTCTTAAAGCTTTGATTGTGTACCCAAAGTCCGATAGAGTCTTTTG  
f21i2-138 ---TTCTTGCTTTTAAATGCTTTTCAATGCTTGTAGCCGAAGTCCGATAGAGTCTTTTG  
f21i2-139 -----TTTGTATGGTGTAGCCGAAATCCGATAGAGTCTTTTG  
f21i2-14 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTAGCTGAATTCATATGATCTTTTG  
f21i2-140 ---T-CTTGCTTCTCAATGCTTTGATGGTGTAAACCGAAGTCTGTATGAGTCTTTTG  
f21i2-141 AAGCTTCTTATTGCTTCTCAAAGATTGATGGTGTAGCTGAACCTCTGTATGAATCTTTTG  
f21i2-142 ---TTGCTTCTTAAAGCTTTGATGGTGTAGCCGAAGTCTGTATGAGTCTTTTG  
f21i2-143 ---TTGCTTCTTAAAGCTTTGATGGTGTAGCCGAAGTCCGATAGAGTCTTTTG  
f21i2-144 ---CTTTGATGGTGTAGCCGAAGTCCGATAGAGTCTTTTG  
f21i2-145 -----  
f21i2-146 AAGCTTCTTCTTGCTTCTCAATGCTTTGATGGTGTAGACGAAGTCCCTTATGAGTCTTTTG  
f21i2-147 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTAGCCGAAGTCTGTATGAGTCTTTTG  
f21i2-148 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTAGCCGAAGTCTGTATGAGTCTTTTG  
f21i2-149 ---TATGAGTCTTTTG  
f21i2-15 A-GCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTGGCTGAAGTCCCATATGATCTTTTG  
f21i2-150 AAGCTTCTTCTTGCTTCTCAATGCTTTGATGGTGTAGCCTAACCTCCGATAGAGGTTTTTG  
f21i2-151 ---CTTTGATGGTGTAGCCGAAGTCCGATAGAGTCTTTTG  
f21i2-152 AAGCTTCTTATTGCTTCTCAAAATTTTTCATGGTGTAGCCGAAGACCGTATGAGCCTTTTG  
f21i2-153 ---CTTCTTATTGCTTCTCAAAGATTAAATGGTGTAGCCGAACCTCTGTATGAATCTTTTG

FIG. 23D-1C



CTTTGACTCCTCTAA-CAAGGAAACAC-----TACATAGACTTTTAAAGATCCAGTTGTGGTCTACTTC  
CTTTGTATCTTCTAA-CAAGGAAACAATACTT  
-----GTTGCGGTTT TAGTTC  
TTTTGTATCTTCTAG-AAGGAAACATTACTTT-----AGCTTTTGGAAAAATGTTGCGGTTCTAGTTC  
CTTTATATCTTCTAA-CAAGAAATCTCTACTT-----AGGATTTTAAAGTTCTTGTGGGTTCTAGTTC  
CTTTGT-ATCTTTAA-CAAGGAACCACTACTTT-----AGCTTTTGAGAACCGATTGCGGTTCTATTTC  
CTTTGTAACCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAAACGATTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGATAACACTACTT-----AGGATTTTAAAGATCTTGTCTGGCTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAGATATTATT-----AGGCTTTCAAGATCCAGTTGAGATTCTAGTTC  
CTTTGTATCTTCTAG-AAGGAAACATTACTTT-----AGCTTTTGGGAAGATGTTGTGGTTC TAGTTC  
CTTTGTATCTTCTAG-AAGGAAACATTACTTT-----AGCTTTTGGGAAGATGTTGCGGTTCTAGTTC  
CTTTGTATCTTTGAA-CAAGGAAACATTACTTT-----AGCTTTTGGGAATCGGTTGCGGTTCTAATTC  
-----TTGCGGTTT TAGTTC  
TTTTGGATATTCGAA-TAGGGAACACTACTTTTACTTAACCTTTTGGGATCTTGTGCGGTTCTAGTTC  
-TTTGTATTTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGATCCGATTGCAGTTCTAGTTC  
CTTTGTATCTTCTAA-CA  
CTTTGTATTTTCTAA-CAATGAAATACAACTTT-----AGTTTTTGGTATCCGGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-GAAGGAAACACTACTTT-----AGCTTTTGGAAAAATGGGTTCCGATTCTAGTTC  
TTTTGGATCTTCTAA-TAGGGAACACTACTTT-----AGCTTTTGGGATCCGGTTGAAGTTCTAGTTC  
-TTTTGTCTCTTCTAA-CAAGGAAACATTACTTT-----ACATTTTGGGTCCTTTTCGGGTTCTAGTTC  
CTTTGTTTCTTCTAA-CAAGGAAACACTACTTT-----ACCTTTTGGGAACCAAGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTTA-CAAGGAGATACTATT-----AGGCTTTCAAGATCCAGTTGAGATTCTAGTTC

FIG. 23D-2C

TTATACTCAATTCATACACATGACATCTAGTCATATTTGACACCAAAACCTAACC 131  
91  
TTATACTCAATCATCCACATGACATCTAGTCATATTTGACTCCAAAA 63  
TTATACTCAATCAAACACATAAATCTTGTCTTATTTGACTCCAAAATACTAACC 175  
TAATATAAAATCATACACATGACAT-----CAAGT 146  
TTATACTCAGTCATACACAGGACATCTAGTTATATTTGACTCCAAAACACTAACC 153  
TTATACTCAATCATACACATGACATTTAGTCATATTTGACTCCAAAA 170  
TAATATTCAATCATACGATGACAT-----CAAGT 145  
TTATACTCAATCATACACATGACATGTCATATTTGACT 164  
TTATACTCAATCAAACAAATAAATCTTGTCTTATTTGACTCCAAAATACTAACC 168  
TTATACTCAATCAAACACATAAATCTTATCTTATTTGACTCCAAAATACTAACC 168  
TTATAGTCAATGATACACATAAATCTGTAATATTTGACTTTAAAATACTAACC 155  
TTATACTCAAAATTACACATGACATCTAGTCATATTTGACTCCAAAATACTAACC 70  
TTATACTCAATCATACACATGACATCTAGTCATTTTCTACTCTAAAACACT 180  
TTATACTCAATCCTACACATCCTAGTTATAATTTGACTCCTTAACACTAACC 177  
77  
TTATACTCAATCATACACATGACATCTAGTCAT 109  
TTATACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACT 173  
TTATACTCAATCATCCACATTTACATC 149  
TTATACTCTATCATACAAATGACATCTAGTCATATTTGACTCCAAAGACAC 149  
TTATACTCAATCACTACACATGACAT 148  
TTATACTCAATCATACACATGACATGACATGTCATATTT 156

FIG. 23D-3C

f21i2-154 AAGCTTCTTGTCTCATAGATTGATGGGTAGCCGAAGTCCGTATAAAGTCTTTGG  
f21i2-155 AAGCTTCGTCTTGTCTCAAGAATTGATGGGTAGCCGAAGTCCGTATAAAGTCTTTGG  
f21i2-156 -----TTGCTTCTAAAGCTTTGATGGGTAGCAGAAAGTACGTATGAGTCTTTGG  
f21i2-157 AAGCTTCTTATTGCTTCTAAATAATTTTCATGGGTAGCCGAATTCGGTATGAGTCTTTGG  
f21i2-158 -----TGCTTCTCAAAGCTTTGATGGGTGTA-CCAAACTCCGTATGAGTCTTTTG  
f21i2-159 AAGCTTCTTCTAGCTTCTCAAACATTTGATGGGTAGCAAAAGTTTGTATGAGTCTTTGG  
f21i2-160 -----TTCTTATTGCTTCTCATAGCTTTGATGTTGTAACCAAGTCCGTATGATTCCTTTGG  
f21i2-161 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGGTAGCCGAAGTTTGTATAAGTCTTTGG  
f21i2-162 -----CTTTGATGGGTAGCCGAAGTTTGTATAAGTCTTTGG  
f21i2-163 AAGCTTCTTCTTGCACTCAAGAATTTGATGGTCTAGCGAAAGTCCGTATAAAGTCTTTGG  
f21i2-164 AAGCTTCTTCTTAAAGATTTGATGGGTAGCCGAAGTCCGTATAAAGTCTTTGG  
f21i2-165 AAGCTTCTTCTGATTCCTCAAACTTTGATGGGTAGCAGAAAGTTTCTATGTCCTTTGT  
f21i2-166 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGGTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-167 -----TTTGATGGGTAGCCGAAGTCCCATATGAGTCTCTGG  
f21i2-168 -----GCTTCTCAAAGCTTTGATAGTGTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-169 AAGCTTCTTATTGTTTCTCAAAGAATTGATGGGTAGCCGAAGTCCGTATGACTCTTTGG  
f21i2-170 -----CTTCTTCTTGCTTCTCAACGCTTTGATGGGTAGCCGAAGTCCGTATGAGTCTTTTG  
f21i2-171 AAGCTTCTTATTGCTTCTCAAAACTTTAAATAGTGTAGCTGAAGTCCGTATAAAGTCTTTGG  
f21i2-172 -----CTTCTTGTGCTTCTTAAAGCTTTGATGGGTAGCAGAAAGTCTGTATGAGTTTTTGG  
f21i2-173 -----GCTTCTCAAAGCTTTAAATAGTGTAGCCGAAGTCCGTATGAGTCTTTGG  
-----

FIG. 23D-1D

ATCTGCATCTTCTAA-CAAGGAAATACTTCTT-----AGGCTTTTA  
ATATGCATCTTCTAA-CAAGGAAACACTTCTT-----TCGCTTTTAAATCCGGTTGCCATTCTAGTTC  
CTTTGTATCTTCTAA-CTTGGAAACACTACTTT-----AGCCTTTGGGAACCAGTTGCCATTCTATTTC  
CTTTGTATCTTCTAA-CAAGGAAACAATACTT  
CTTTGTATCTTCTAA-CAAGGAGATACTACTT-----AGGCTTTT  
CTCTGTATCCTCGAA-CAAGGAAACACTACT  
CTTTGAATCTTCTAA-CAAGGAAACACTACTT-----AGCCTTTGGGAACCAGTTGCCGTTCTAGTTC  
CTTTGTATCTACAAA-CAAG-AAACATTACTT-----AGCCTTTGGGAATCGGTTGCCGTTCTAGTTC  
ATTTGTATCTTTTAA-CAAGGAAACATTACTT-----AGCCTTTGGGAATCGATGCCGTTCTAGTTC  
ATTTACATCTTCTAA-CAAGGAAACATTGTT-----TGGCTTTTCAGATCTGGTTAAGGTTCTTGTTC  
ATTTACATCTTCTAA-CAAGGAAACATTGTT-----TGGCTTTTAAGACCCGTTGTGGTTCTAGTTC  
CTTTGTATCCTCTAA-CAAGGACACACTA  
CTTTGTATCTACAAA-CAAG-AAACATTACTT-----AGCCTTTGGGAATCGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-TACGGAACCACTACTT  
CTTTGTATCTCCTAA-TAAGGAACCACTACTT  
ATTTGTATCTTCTAA-CAAGGAAACATTACTT  
-----GTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAGATACTACTT-----AGGCTTTCAAGATCTAGTTGAGATTCTAGTTC  
CTTTGTATCTTCTAA-CACAGAAACATACTT-----AGCCTTTGGGAATTGGTTGCCGTT  
CTTTTATCTTCAAG-AAGTGAACACTATTT-----AGCCTTTGGGAAGATGTTGCCGTTCTAGTTC  
CTTTGTATTTTCTAA-TAAGGAACCACTA-----  
-----AACTTTAGGAACCGGTTGTGATTCTAGGTC  
-----TATCTTCTAA-CAAGGAAACAATACTT-----

FIG. 23D-2D

TTTAACTTAAACATACACATTACAT 100  
TGTACTCAATCGAACACATGACATCTAGTCATATTGACTCCAAA 148  
160  
91  
86  
90  
TTTAACTCAATCATACATGACATCTAGTCATATTGACTCCAAAACACTAA 172  
TTTAACTCAATGATACACATGATATCCTGTAAATATTTCACCTCTAAAATACTAACC 177  
TTTAACTCAATCATAAACATAAACATCTAGTCATATTGACT 141  
GTATCTCAATCATACATGACATC 149  
TTTAACTCAA 133  
88  
TTTAACTCAATGATACACATGA 144  
67  
79  
91  
TTTAACTCGCAATCATACATGACATCTAGTTGTATTGAAATCCTAAAACACTAA 69  
TTTAACTCAATCATACATGACATGACATATAGTCATATTGACTCTGAAAACACTAACC 175  
116  
TTTATGCTCAATCAAACACATAACATATTGTCTTATTGACTCCAAAATACTAA 173  
-----C 77  
TTATCCTCAATCATATAACTGACATCTAGTCATAGTTGACTACAAAACACTAACC 113

FIG. 23D-3D

f21i2-174 ---TT-----  
f21i2-175 -----  
f21i2-176 -----TTTGTGGTAGCCGAAGTCAATAGAGTCTCTGG  
f21i2-177 ---CTTCTTGTGCTTCTAAAGCTTTGATGGTGTAGCAGAAAGTCTGTATGAGTTTCTGG  
f21i2-18 -----TTTGTGGTGTAGCCGAAGTCCGTATGAGTCTTTGA  
f21i2-19 ---TTCTTATTGCTTCTCAAAGTTTTGTATGGTGTAGCCGAAATTCGTATGAGTCTCTAG  
f21i2-20 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTGTAGCCGAAGTCCGAATGAGTCTTTGG  
f21i2-21 AAGCTTCTTATTGCTTCTCAAATTTTGTATGGTGTAGCCAAAGTCTGTATGAGTCTTTGC  
f21i2-22 AAGCTTCTTATTGCTTCTCAAATTTTGTATGGTGTATCCGAAGTCCGTATGAGTCTTTGG  
f21i2-23 AAGCTTCTTATTGCTTCTCAAACATTAATGGCTTAGCCAAAGTCCGTATGAGTCTTTTAG  
f21i2-24 AAGCTTCTTATTGCTTCTCAAACATTTTCATGGTGTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-25 AAGCTTCTTATTGCTTCTCAAAGCATTGATGGTGTAGCCGAAGTACGTATGAGTCTTCGG  
f21i2-26 AAGCTTCTTATTGCTTCTCAAACCTTTTGTATGGTGTATCAAAAGTTTGTATGAGTCTTTTG  
f21i2-27 AAGCTTCTTATTGCTTCTCAAAGCCTTTGATGGTGTAGCTGAAGTCCGTTTGAGACTTTGG  
f21i2-28 AAGCTTCTTATTGCTTCTCAAACCTTTGATGGTGTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-29 AAGCTTCTTATTGCTTTTCCAAGCCTTTGATGGTGTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-30 ---CTTCTTCTTCTCAAAGCCTTTGTTGGTGTAGCCAAAGTCCGTATGAGTCTTTGA  
f21i2-31 -----TTGCGTCTTATAGCTTTGATAGTGTAGCCGAAGTTCCGTATGAATCTTTGT  
f21i2-32 AAGCTTCTTCTTCTCAAACCTTTGATGGTGAAGCCAAAGGCTGTATGAGTCTTTGG  
f21i2-33 AAGCTTCTTCTTCTCAAAGCCTTTGATGGTGAAGCCGAAGTCCGTATGAGTCTTTGG  
AAGCTTCTTCTTCTCAAATTTTCATGGTGTAGCCGAAGTCCGTATGAGTCTTTGG

FIG. 23D-1E

-----GCGGTTCTAGTTC  
-TTTGTATCTTCTAA-CAAGGAAACTCTATTT-----AGCTTTTGGGAACCAGTTGCAGTTCTAGTTC  
CTTTGTATCTTCTAA-TACGGAACCACTACTT  
CTTTTATCTTC  
CTTTGTATCTTCAAA-CAAGGAAATATTACTTT-----AGGTTTGGGAAACGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGCAACCGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTC-----AGCTTTTGGGAAGCGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AATTTTGGAAACCGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATAAATT-----AGCTATTGGCAATCGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATAATT-----AGCTTTTGGGAATTAGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTGA-CAAGGAAACACTACTTT-----TGCTTTTGGGAACCGGTTGCCGTTCTAGTTC  
CTTTGTATTTCTAA-CAAGGAAACACTACTTT-----AGATTTTGGGAACCGGTTGTAGTTCTAGTTC  
CTTTGTATCTCCAA-CAAGGAAACAC-----TACTTAGGCTTTAAGATCCAGTTGTGGTTCTACTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTAGGAACCGGTTGCCGTTATAGTTC  
CTTTGTATTTCTAA-CAAGGAAACATTACTTT-----AGCTTTTGGGAACCGGTTGCCGTTCTAGTTC  
CTTTAAATCTTCTAA-CAAGGAAACATTACTTT-----AGCTTTCGGGAACCGGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAGCATTACTTT-----AGCTTTTCCGGAACCGGTTGCCGTTCTAGTTT  
CTTTGTATCTTCTAA-CAAGGATACAC-----TACTTGGGCTTTAAGATCCGTTGTGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACAC-----TACTTAGGCTTTAAGATCCGTTGCAGTTCTAGTTC  
CTTTGTATTTCTAA-CAAGGAAACACTACTTT-----AGCATTTGGGATCATATTGCCGTTCTTGTTC  
CTTTGTATCTTCTAA-TAAGGAACCACTACTTC-----TGCTTTATGGAACCAAGTTGCCGTTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----TGCTTTTGGGAACCAAGTTGCCGTTCTAGTTT

FIG. 23D-2E

TTATATAGAATCATACATATGACCTCTAGCCATATTGACTCCAAAACACTAAC 69  
CTCTACTCAATCATACATGACATCTAGTTTATTTATTTATTCAAAACGCTAAC 117  
67  
69  
TTATACTCAATCATACATGACATCTAGTCATATTGACTCCAAAACACTAAC 154  
TTATACTCAATCATACATGACATCTAGTCATATTGACTCCAAAACACTAAC 166  
TTATACTCAATCATCCACATGACATCTAGTCATATTGACTCCAAAACACTAAC 177  
TTATACTCAATCATACATGACATCTTGTCTATCTGACTCCAAAACACTAAC 178  
TTATACTCAATCATACATGACATCTAGTCATATTGACTCCAAAACACTAAC 178  
TTATACTCAATCATACATGACATCTAGCCATATTGATTCCGAAAACACTAAC 178  
TTATACTCAATCATACATGACATATAGTCTTATTTGACTCCAAAATACTAAC 178  
TTATACTCAATCATACATGACATCTAGTCATATTGACTCCAAAACACTAAC 178  
TTATACTCAATCATACATGACATCTAGTCATATTGACACAAAACACTAAC 178  
TTATAATCAATCATACATGACATCTAGTCATATTGACTCCAAAACACTAAC 178  
TTATACTCAATCATACATGACATATAGTCATATTGACTCCACAACAC 173  
TTATACTTAATCATCCACATGACATCTAGTCATATTGACTCCAAAACACTAAC 177  
TTATACTCAATCATACACTTGACATCTAGTCATATTGTTGTTCTCCAAAACACTAA 176  
TTATACTCAATCATACATGACATCAAAATTATATTAACTCCAAAACACTAAC 175  
TTATACATAATCATACATGACTACAAATTCATATTGACTCCAGAACACTAAC 168  
TTATACTCAATCATACATGAAATGTAGTCATTTTGTGACTCCAAAGCACTA 175  
TTATACTCAATCATACATGACATCTAGTCATATTGAGTCCAAAATACTAAC 178  
TTATACTCAATCATACATGACATATAGTCTTTTGTGACTCCAAAACACTAAC 178

FIG. 23D-3E



f21i2-34 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGAAGTCCGTATGAGTCTTTGG  
f21i2-35 -----TTCTTGCTTCTCAAGCTTTTGATGGTGTAAGCGAAGTCTGTATGAGTCTTTGG  
f21i2-36 AAGCTTCTTATTGCTTCTCAAAACTTTTATGGTGAAGCCAAAGTCCCTATGAGTATTTGG  
f21i2-38 AAGCTTCTTATTGCTTTTCCAAAGCTTTTGATGGTGTAAGCGAAGTCTGTATGAGTCTTTTG  
f21i2-39 AAGCTTCTTATTGCTTCTCAAAACTTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-4 A-GCTTCTTATTGCTTCTCAAAAGCTTTTGATGGTGTAAGTCCCTATGATTCCTCTGG  
f21i2-40 -----TTCTTCTCTCAAGCTTTTGATGGTGAAGCCGAAGTCCGTATGAGTCATTGT  
f21i2-41 AAGCTTGTATTGCTTCTCAAAATTTTGATGGTGTAAGCGGAGTCCGTATGAGTCTTTGG  
f21i2-42 AAGCTTCTTCTTGTCTCAAAATATTAAATGGTGTAAGCCAAAGTCCATATAAGTCTTTGG  
f21i2-43 AAGCTTCTTATTGCTTCTCAAAAGCTTTAAATGGTGTAAGCCGAAGTCAAGTATGAGTCTTTGG  
f21i2-44 AAGCTTCTTATTGCTTCTCATAGCTTTTGATGATGTAGTGAATTCATATGATTCCTTTGG  
f21i2-45 AAGCTTCTTATTGTTTCTCAAAACTTTTATGGTGAAGCCAAAGTCCGTATGAGTATTTGT  
f21i2-46 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGTGTAAGCCAAAGTCCGTATGAGTTTTGG  
f21i2-47 AAGCTTCTTATTGCTTCTCATAGCTTTTGATGGTGTAAGTCCATATGATTCCTTTGG  
f21i2-48 AAGCTTTTATTGCTTCTCAAAAGCTTTTGATGGTGTAAGTCCGTATGAGTCTTTGG  
f21i2-49 AAGCTTCTTCTAGTTTCTCAAAAGATTGATGGTGTAAGCCGAAGTCCATATGAGTCTTTGG  
f21i2-5 AAGCTTCTTCTTCTCAAAAGCTTTTGATGGTGTAAGCCGAAGTCCGTATGTCCTTTGG  
f21i2-50 AAGCTTCTTATTGCTTCTCAGAACTTTGGATGGCTTAGCCGAAGTCCGTATGAGTTTTAG  
f21i2-51 AAGCTTCTTATTGCTTCTCAAAACTTTTCATGGTGTAAGCCGAAGTCCGTATGAGTCTTTGG  
f21i2-52 AAGCTTTTATTGCTTCTCAAAAGCTTTTGATGGTGTAAGCCGAAGTCCGTATGAGTCTTAGG  
f21i2-53 AAG-----TCCATATGAGTCTTTGG  
f21i2-54 AAGCTTTTATTGCTTCTCAAAAGCTTTTGATGGTGTAAGCCGAAGTCCGTATGAGTCTTAGG

FIG. 23D-1F

CTTTGTATCTTCTAA-CAAGGAAACATAA CTTT-----AGCTATTGGGAATCGGTTGCCATTCTAGTTC  
CTTCGTATCTTTAAACAAGGAAACACTACTT-----AGGCTTTTAAAGATTCGGTTGCGGTTCTAGTT-  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTG-----AACCTTTGGGAACCGGTTCCGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAGCACTACTTT-----AGCTTTTGGAACTGGTTGTGGTTCTAGTCC  
CTTTGTATCTTCTAA-CAGG-AAACAATACTTT-----TGCTTTTGGGAACCGGTTACGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAACCGGTTGCGGTTCTAGTTC  
CTTCGTATCGTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGG-AAACCGTTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATACTACTT-----AGCTAGTGGGAATCGGTTGCGGTTCTAGTTC  
ATCTGCATCTTCTAA-CAAGGAAACACTTTT-----TGCTTTTAAAGATCCGGTTGCGGTTTCTAGTTC  
CTTTGTATCTTTAT-AAGGAAACCTACTACTT-----AGCTTTTGGGAACCGATTGCGGTTCTAGTTC  
CTTTGAATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAAGCAGTTGCGGTTCTAGTTC  
CTTTCTATCTTCTAA-TAAGGAAACACTACTTT-----ACGTTTGGGAACAGGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAG-AAGGAAACACAACTTT-----AGCTTTTGGGAAGATGTTGCGGTTCTAGTTC  
CTTTGAATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAAGCAGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-TAAGGAACCACTACTTT-----AGCTTATGGAACACTAGTTGCGGTTTCTAGTTC  
CTTTGTATCTTCTAA-TAAGGAAACACTATTT-----AGCTTTTGGGAACCGGTTGCGGTTATAGTTC  
CTTTGTATCTTTTAA-CAAGGAAACAC-----TTCTTAGGCTTTTAAAGATCCGGTTGCGCTTCTAGTTC  
ATTTGTATCTTCTAA-CAAAGAAACATACTACTT-----AGTTTTTAGGAATCAGTTGCGGTTCTAGTTC  
CTTTGTATCTTTTGA-CAAGGAAACACTACTTT-----TGCTTTTGGGAACCGGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-TAAGGAACCACTACTTT-----AGCTTTTGTAAACCACTAGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAATATTACTTT-----AGCTTTTGGGAACCTGGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-TAAGGAACCACTACTTT-----AGCTTTTGGGAACCACTAGTTGCGGTTCTAGTTC

FIG. 23D-2F

TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACATGACATCAAAATCATATTTGACTCCAAAACACTAACC 171  
TTATACTCAATCATACATACATAAATAGTCATATTTGAATCCAAAACACTAACC 178  
TTATACTCAATCATAGACATGACATCTAGTCATATTTGTCTCCGAAACACTAAC 177  
TTATAAACAATCATCCACATGACATCAAGTCATATTTGACTCCAAAATACTAACC 177  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 177  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 173  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAA 176  
TTATACTAAAACATACATGACATCAAGTTATATTTGACTCCCAAACACTAA 176  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACCTAACC 178  
TTATACTCAGTCATCCACATGACATATAGTCATATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACATGACATCTTGTGTCATATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCAAACACATAAACATCTTGTGTCATATTTGACTCCAAAACACTAAC 174  
TTATACTCAAACATACACATGACATCTTGTGTCATATTTGACTCTAAAACACTAACC 178  
TTATACTCAATGATACACATGACATCTAGTCATATTTGACTCCAAAATACTAACC 178  
TTATACTCAATCATACATGCCATATAATCATATTTGAATCCAAAGCACT 174  
TTATACTCAATGATACACATGACATCTAGTCATATTTGACACCCAAAACACTAACC 178  
TTATACTCAATCGTACACATGACATCTAGTCATATTTGACTCCGAAAACACTAACC 178  
TTATACTCAATACTACACATGACATATAGTCTTATTTGACTCCAAAATTACTAACC 178  
TTATACTCCATCATACACATGACATCTAGTCATATTTGACTCCAAAATACTAACC 178  
TAATACTCAATCATACAAAATGACATCTATTTCATATTTTCACTCCAAAACACTAACC 138  
TTATACTCCATCATAGACATGACATCTAGTCATATTTGACTCCAAAATACTAACC 178

FIG. 23D-3F

f21i2-55 AAGCTTCTTATTGATTCTCAAAATTTTGATGGTGTAACGAAAGTCCGATAGAGTCTTTGG  
f21i2-56 AAGCTTCTTATTGCTTCTCAAGCTTTGATGGTGTAAGCGAAGTCCGAATGAATCTTTGG  
f21i2-57 A-GCTTCTTCATGCTTCTCAAGCTTTTATGGTGTAAGCGAAGTCCGACGAGTCTTTGG  
f21i2-58 AAGCTTCTTCTTCTCATAGATTGATGGTGTAAGCGAAGTCCGATAGAGTCTTTGG  
f21i2-59 AAGCTTCTTCTTCTCAAGCTTTGATGGCGTTTCCACATTCGCGTGAATCTTCCG  
f21i2-60 AAGCTTCTTATTGCTTCTCAAGCATTTGATGGTGTAAGCGAAGTCCGAATGAGTCTTTGG  
f21i2-61 ---CTTCTTCTTCTCAAGCTTTGATGGTGTTGCGAAAGTCAAGTCAAGTCAATCTTCGG  
f21i2-62 ---CTTCTTCTTCTCAAAACATTTATGGCTTAGCCGAAAGTCCGATAGAGTCTTTAG  
f21i2-63 AAGCTTCTTATTGTTTCTCAAAACCTTTTATGGTGAAGCCAAAGTCCGATAGAGTCTTTGG  
f21i2-64 ---CTTCTTCTTCTCAAGCTTTGATGGTGTTGCGAAGTCTGATAGAGTCTTTGG  
f21i2-65 AAGCTTCTTATTGCTTCTCAAAATGTTGATGGTGTAAGCGAAGTCCGATAGAGTCTTTGG  
f21i2-66 AAGCTTCTTATTGCTTCTCAAAATTTTATGGTGTTATCCGAAAGTCCGATAGAGTCTTTGG  
f21i2-67 AAGCTTCTTCTTCTCAAGCTTTGATGGTGTTGCGAAGTCAAGTCAAGTCAAGTCTTTGG  
f21i2-68 AAGCTTCTTCTTCTCAAGCTTTGATGGTGTTGCGAAGTCAAGTCAAGTCAAGTCTTTGG  
f21i2-69 AAGCTTCTTCTTCTCAAAACCTTTGATGGTGTAAGCGAAGTCTTGTATAGAGTCTTTGT  
f21i2-70 ---CTTCTTCTTCTCAAGCTTTGATGGTGTAAGCGAAGTCCCTTATGATCTTTGG  
f21i2-71 AAGCTTCTTATTGCTTCTCAAGCTTTGATGGTGTAAGCGAAGTCTTGTATAGAGTCTTTGG  
f21i2-72 AAGCTTCTTCTTCTCAAGCTTTGATGGTGTAAGCGAAGTCTTGTATAGAGTCTTTGG  
f21i2-73 AAGCTTCTTCTTCTCAAGCTTTTAAATGGTGTAAGCGAAGTCCATATAGAGTCTTTGG  
f21i2-74 AAGCTTCTTATTGTTTCTCAAAACCTTTTATGGTGAAGCCAAAGTCCGATAGAGTCTTTGG  
f21i2-75 AAGCTTCTTCTTCTCAAGCTTTGATGGTGTAAGCGAAGTCCGATAGAGTCTTTGG

FIG. 23D-1G

CTTTGTATCTTCTAA-CAAGGAAACATAACTTT-----AGCTATTGGGAATCGGTTGCCATTCTAGTTC  
CTTTTATCTTCTAA-CAAGGAATCACTACGTC-----AGCTTTTGGGAAGCAATTGCGGTTCTAGTTC  
CTTTGTATCTCCTAA-CAAGGAAACACAACTTT-----AACTTTTGGGAACCGGTTGTGGTCTAGGTC  
CTTTGTCTCTTCTAA-CTACGAAACATTACTTT-----ACCTTTTGGAAATCCGATAGCGGTTCAAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACAC-----TAATTTAGCTTTTGGGATCTTGTTCGGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAACCGGTTGCGGTTCTAGTTC  
CTTTATATCTTCTAA-CAAGGAAACAC-----TAATTTAGCTTTTGGGATCTGTTGCGATTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATTAAATTT-----AGCTTTTGGGAATTAGTTGCGGTTCTAGTTC  
CTTTCTATCTTCTAA-CAAGGAAACACTACTTT-----ACCTTTTGGGAACCGGTTGCGGTTCTAGTTC  
CTTTGT-TCTTCAA-CAAGGAAACATTACTTT-----AGCTTTTGGGAATCGGTTGCGGTTCTAGTTC  
CTATGTATCTTCTAA-CAAGGAAATACTACTTT-----AGCTTTTGGGAATTGTTGCGGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGAAACATAACTTT-----AGCTATTGGGAATCGGTTGCCGTTCTAATTC  
CTTTGTATCTTCTAA-CAGGAAACATAACTTT-----AGCTATTGGGAATCGGTTGCCGTTCTAGTTC  
ATTTGTAACCTTCTAA-CAAGGAAACACTACTTT-----GGCTTTTGGGAACCAAGTTGCCGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAATACTACTTT-----AGCTTTTGGGAACCGGTTGCCGTTCTAGTTC  
CTTTGTATCCTCTAA-CAAGGAAACACTACTTT-----AGCCTTTAAAGATCCGTTTGTAGTTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAACCGGTTGCCGATTCTAGTTC  
CTTTGTATCTTCTAA-CAAGGAAACATAACTTT-----ATCTCTTGGGAACCAAGTTGCCGTTCTAGTTC  
CATTGTATCTTCTAA-TAAGGAACCACTACTTT-----AGCTTTTAGGAACCAAGTTGCAGTTCTAGTTC  
CTTTGTATCTTCTAA-TAAGGAACCACTAAATTT-----AGCTTATGGAACACTAGTTGCCGTTTCTAGTTC  
CTTTCTATCTTCTAA-CAAGGCAACACTACTTT-----GGCTTTTGGGAACCGGTTGCCGATTCTAGTTC  
CATTGTATCTTCTAA-TAAGGAACCACTAGTTT-----AGCTTATGGAACCAAGTTGCCGTTTCTAGTTC

FIG. 23D-2G

TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATCCACATGACATCTAGTCATATTTGACTCCCAAACACTAAC 177  
TTATACTCAATCATATAAATGACATCCAGTCATATTTGACTCGAAAACACTAACC 177  
TTATACTCAATCATACATGATATCTAGTCATATTTGACTCCAAAACGCTAA 176  
TTTACTCAATCATACAAATGACATCAAGTTATATTTGACTCCCAAACACTAA 176  
TTATATTCAATCATCCACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
TTATACTTAATCATACATGAACTCTAGTCATATTTGAATCCAAAACAGTAACC 175  
TTATACTCAATCATACATGACATCTAGCCATATTTGATTCGAAAACACTAACC 175  
TTATACTCAATCACTACATGACATATAGTCTTATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACATGACATCTAGTCGTATTTGACTCCAAAACACTAACC 154  
TTATACTCAATCATATAAATGACATCTACTCATATTTGACTCCAAAACACTAACC 138  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACATTAATCATCTAGTCATATTTGATTCAAAACACTAACC 178  
TTATACTCAATCATACATGACAAGTAGTCATATCTGACTTCAAAAACACTAACC 178  
TAATACTCAATCATACAAATGACATCTATTTCATATTTCACTCCAAAACACTAACC 138  
TTATACTTACTCATACAAATGACCTGAAGTCATAGTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTCCGAAAACACTAACC 175  
TTTCTACTCAATCATACATGACATATAGTCATATTTGACTCCGAAAACACTAACC 178  
TTATACTCAATCATACATTAATCATCTAGTCATATTTGACTCCAAAATACTAACC 178  
TTATATTTCGATCATACTCATGACATCTAGTCATATTTGACTCCAAAATACTAACC 178  
TTATATTCAATCACTACATGACATATAGTCTTATTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACATGACATCTAGTCATATTTGACTC

FIG. 23D-3G

**FIG. 23D-1H**

CTTTGTCTTCTAA-CAAGGAAACACTACTTT-----ACCTTTTCGGATCCGATTGCGGTTCTAATTC  
CTTTGTATCTCCTAA-CAAGGAAACACAACTTT-----AAGCTTTTGGGAACCGTTTGTGGTTCTAGGTC  
CTTTGTATCCTCTAA-TAAGAAACAC-----TACTTAGGCTTTAAGATCCAGTTGTGGTTCTACTTC  
CTTTGTATCTTCCAA-CAAGGAAACATTAATTT-----AGCTTTTGGGAATCGGTTGAGGTTCTATTTC  
CTTTGTATCTTCTAA-CAAGGAAACACTACTTT-----AGCTTTTGGGAACCGTTGCGATTCTAGTTC  
CTTTGTATCTTCTAA-CTTGGAAACACTACTTT-----AGCTATTGGGAACCTGTGCGGTTCTAGTTC  
TTTTGGATCTTCTAA-TAAGGAAACACTACTTT-----AGCTTTTGGGATCCGTTGCGGTTCTAGTTC  
CTTTGTATCCTCTAA-CAAGGAAACACTACTT-----AGCCTTTTAAAGATTCGTTTGTAGTTCTAGTTC  
CTTCGTATCTTCTAA-CAAGTAAACAC-----TACTTTAGCTTTTGGGATCCAGTTGTGGTTCTACTTC  
CTTTGTATCTTCTAA-CAAGGAGATACTACTT-----AGGCTTTTCAAGATCCAGTTGAGATTCTAGTTC  
CTTTGTATCTTCTAG-TAAGGAACCACTACTTT-----AGCTTATGGAACCAAGTTGCGGTTTTAGTTC  
CTTTGTATCTTCTAACAAGGAAACACTACTTTTAGCTTTTGGGAATCAGTTGCGGTTCTAGTTCTTATACT  
70 80 90 100 110 120 130  
CTTTGTATCTTCTAACAAGGAGATACTACTTAAGCTTTCAAGATCTAGTTGAGATTCAGTTCTTATACT  
CTTTGTATTTCTAACAAGGAAACACTTCTTGGGTTTATGATCCGTTGCGGTTCTAGTGCTTATACT  
CTTAGTATCTTCAACAAGGAAATATTAATTTTAACTTTTGGGAATCGGTTGCGGTTATAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATCTAGCTTTTAGGAATCGGCTGCGGTTCTAGTTCCTATACT  
CTTTCTATCTTCTAACAAGGAAACACTACTTTTGGGTTTGGGAACCGGTTGCGATTCTAGTTCTTATACT  
CTTTGTATGTTCTAACAAGGAAACACTACTTTTGGCTTTTGGGAACCTGGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAGATACTACTTAGGCTTTCAAGATCAAGTTGATATTCTAGTTCTTATACT  
CTTTGTATCTCCTAACAAGGAAACACAACTTTAACTTTTGGGAACCGGTTGGGTTCTAGGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAACTTTAGCTATTGGGAATCGGTTGCGGTTCAAGTTCTTATGCT

FIG. 23D-2H



TTATACTCTATCATACAAATGACATCTAGTCATATTTGACTCCAAGACAC 173  
TTATACTCAATCATATAAAATGACATCTAGTCATATTTGACTCTAAAACACTAACC 177  
TTATACTCAATCATACACATGCCATCTAGTCATATTTGACACCAAACACTAACC 131  
TTATACTCAATGATACATATGACATCTCTGTAATATTTGACTCCAAAATACTAACC 155  
TTATACTCAATCATACACATGACATCTAGTCATATTTGACTCCGAAAACACTAACC 175  
TTATACTCAATCGAACACATGACATCTAGTCATATTTGAGTCCAAAACACTAACC 155  
TTATACTCAATCATACACATTAACATCTAGTTATAATTTGACTCTTAAACACTAACC 178  
TTATACTTAATCATACAAATGACCTGAAGTCATAGTTGACTCCAAAACACTAACC 178  
TTATACTCAATCATACACATGACCTCTAGTCATATATGAATCCAAAACACTAACC 178  
TTATACTCAATCATACACATGACATATAGTCATATTTGACTCTGAAAACACTAACC 174  
TTATACTCAATCATACATAAACATCTAGTCAGATTTGACTCCAAAATACTAACC 166  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC  
140 150 160 170  
TAATCGTACACATGACATGTAGTCATATTTGACTCTGAAAACACTAACC 178  
CAATGATACACAAAACATCTAGTCATATTTCACTCCAAAACAGTAACC 178  
CAATCATACACATGACACCTAGTAATATTTGAATCCAAAAGCACTAACC 178  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 177  
CAATACTACAGATGACATATAGTCTTATTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATACTTTTATTTGACTCCAAAATACTAACC 178  
CAATCATACACATGACATGTAGTCATATTTGACTCTGAAAACAAATAACC 178  
CAATCATATAAATGACATCTAGTCATATTTGACTCGAAAAGCACTAACC 177  
CAATCATACACATGACATCTAGTCAT-TTTGACTCCAAAACACTAACC 177

FIG. 23D-3H

f21i2-95 AAGCTTCTTATTGCTTTTCCAAAGCTTTGATTGTGTAGCCGAAAGTCCGATAGTCTTTGG  
f21i2-96 AAGCTTCTTCTTGCTGCTCAATTCTTTGATAGTGTAGCCGAAAGTTTGATAGTCTTTGG  
f21i2-97 -----TATGAGTCTTTGG  
f21i2-89 AAGCTTCTTCTTACTTCTCAAAGATTGATGGTGTAGCCGAAAGTCCGATAAAGTCTTTGG  
f21i2-99 AAGCTTCTTCTTGCTTCTCAAAGCATTGATGGTGTAGCCCAAAGTCCGATGAATCTTTGG  
f6h8-1 AAGCTTCTTATTGCTTCTTAAACCTTTGATGGTGTAGCCGAAAGTCCGATAGTCTTTGG  
f6h8-10 AAGCTTCTTATTGCTTCTCAAACCTTTGATGGTGTAGCCGAAAGTCCGATAGTCTTTGG  
f6h8-100 AAGCTACTTATTGCTTCTCAAACCTTTGATGGTGTAGCCCAAAGTCCGATAGTCTTTGG  
f6h8-101 AAGCTACTTATTGCTTCTCAAACCTTTGATGGTGTAGCCCAAAGTCCGATAGTCTTTGG  
f6h8-102 AAGCTACTTATTGCTTCTCAAACCTTTGATGGTGTAGCCCAAAGTCCGATAGTCTTTGG  
f6h8-103 AAGCTACTTATTGCTTCTCAAACCTTTGATGGTGTAGCCCAAAGTCCGATAGTCTTTGG  
f6h8-104 ---CTTCTTCTTAAAGCTTTTGGTGTAGCCCAAAGTCCGATAGTCTTTGG  
f6h8-105 AAGCTTCTTATTGCTTCTCAAATTTTGGTGTAGCCGAAAGTCCGATAGTCTTTAG  
f6h8-106 AAGCTTCTTATTGCTTCTCAAATTTTGGTGTACACGAAAGTCCGATAGTCTTTGG  
f6h8-107 AAGCTTCTTATTGCTTCTCAAATTTTGGTGTAGCCGAAAGTCCGATAGTCTTTGG  
f6h8-108 AAGCTTCTTATTGCTTCTCAGAACTTGGATGGCTTAGCCGAAAGTCCGATAGTCTTTAG  
f6h8-109 ---CTTCTTAAAGCTTTTGGTGTAGCCCAAAGTCCGATAGTCTTTGG  
f6h8-11 AAGCTTCTTATTGCTTCTCAAACCTTTGATGGTGTAGCCGAAAGTCCGATAGTCTTTGG  
f6h8-110 AAGCTTCTTATTGCTTCTCAAATTTTGGTGTACACGAAAGTCCGATAGTCTTTGG  
f6h8-111 ---CTT-----TGATGGTGTAGCTGAAGTCCCATATGATTCCTTTG  
f6h8-112 AAGCTTCTTATTGCTTCTCAAATTTTGGTGTAGCCGAAAGTCCGATAGTCTTTAG  
f6h8-113 AAGCTTCTTATTGCTTCTCAAACATTAAATGGCTTAGCCGAGTCCGATAGTCTTTAG

FIG. 23D-11

**FIG. 23D-21**

CA-TCATACAAATGACATCTATTTCATATTTCACTCCAAAACACTAACC 177  
CAATCATACAAATGACATCTAGTCATATTTGACTCCAACACAC 173  
CAATCAT-CACATGACCTCTAGTCATATTTGACTCCAAAACACTAA 128  
CAAACATACATGACATCTAGACATATTTGACTCCCAAACACTAA 176  
-----C 131  
CAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATCATACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATCATCCACATGACCTCTAGTCATATGTGACTCCAAAAC 171  
CAATCATCCACATGACCTCTAGTCATATGTGACTCCAAAAC 171  
CAATCATCCACATGACCTCTAGTCATATGTGACTCCAAAAC 171  
CAATCATCCACATGACCTCTAGTCATATGTGACTCCAAAAC 171  
CAATCAAACACATAACATCTTGTCTTATTTGACTCCAAAATACTAACC 175  
TAAATCATACACATAACATCTTGTCTTATTTGACACCAAATACTAACC 178  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATCTAGTCCTTTTGTGACTCCAAAACACTAACC 178  
CAATCGTACACATGACATCTAGTCATATTTGACTCCGAAAACACTAACC 178  
CAATCAAACACATAACATCTAGTCATATTTGACTCCCAAACACTAAC 174  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACAT-CAGTCATATTTGACTCCAAAAC 146  
TAAATCATACACATAACATCTTGTCTTATTTGACACCAAATACTAACC 178  
CAATCATACACATGACATCTAGCCATATTTGATTCCGAAAACACTAACC 178

FIG. 23D-3I

f6h8-114 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGAAAGTCCGATAGTCTTTGG  
f6h8-115 AAGCTTCTTATTGCTTCTCAAAATTTTGATCCGTACACGAAAGTCCGATAGTCTTTGG  
f6h8-116 -----TTTGATGGTGTAAGTCCGATAGTCTTTGA  
f6h8-117 -----TTTGATGGTGTAAGTCCGATAGTCTTTGA  
f6h8-118 AAGCTTCCCTATTGCTTCTCAAAACATTAATGGCTTAGCCGAAAGTCCGATAGTCTTTAG  
f6h8-119 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGAAAGTCCGATAGTCTTTAG  
f6h8-120 AAGCTTCTTATTGCTTCTCAAACTTTTGATGGTGTAAGTCCGATAGTCTTTGG  
f6h8-121 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAAGTCCGATAGTCTTTGG  
f6h8-122 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAAGTCCGATAGTCTTTGG  
f6h8-123 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAAGTCCGATAGTCTTTAG  
f6h8-124 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGAAAGTCCGATAGTCTTTGG  
f6h8-125 AAGCTTCTTATTGCTTCTCAAAACATTAATGGCTTAGCCGAGTCCGATAGTCTTTAG  
f6h8-126 -----TTTGATGGTGTAAGTCCGATAGTCTTTGA  
f6h8-127 AAGCTTCTTATTGTTTCTCAAAACCTTTTATGGTGAAGCCAAAGTCCGATAGTCTTTGT  
f6h8-128 AAGCTTCTTATTGATTTCTCAAAATTTTGATGGTGTAACGAAAGTCCGATAGTCTTTGG  
f6h8-129 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGAAAGTCCGATAGTCTTTGG  
f6h8-130 AAGCTTCTTATTGCTTCTCAAAACCTTTGATGGTGTAAGTCCGATAGTCTTTGG  
f6h8-131 ---CTT-----TTGATGGTGTAAGTCCATATGATTCCTTTG  
f6h8-132 AAGCTTCTTATTGCTTCTCAAAACCTTTTCATGGTGTAAGTCCGATAGTCTTTGG  
f6h8-133 AAGCTTCTTATTGCTTCTCAAAAGATTTTGATGGTGTAAGTCCATATGAGTCTTTGG  
f6h8-134 AAGCTTCTTATTGCTTCTTAAAGCTTTTGATGGTGTAAGTCCGATAGTCTTTGG

FIG. 23D-1J

CTTTGTATCTTCAAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTATCTTCAAACAAGGAAATATTAGTTTGGGAATCGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCAAACAAGGAAATATTAGTTTGGGAATCGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAATTAGCTTTTGGGAATTAGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCAAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAAACACTACTTTAGCTTTTGGGAACGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTTGGTCTTTGGGAACAGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAAGCTTTTGGGAATCAGTTGCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAATTAGCTTTTGGGAATTAGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAAGCTTTTGGGAATCGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTACGTTTGGGAACAGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTATCTTCAAACAAGGAAACATAAAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAAACACTACTTTTAGCTTTTGGGAACGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTTGGTCTTTTGGGAACGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTTGGTCTTTTGGGAACGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTTGGTCTTTTGGGAACGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTTGGTCTTTTGGGAACGGTTGCCGTTCTAGTTCTTATACT

FIG. 23D-2J

**FIG. 23D-3J**

f6h8-134 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGGTACACGAAGTCCGATAGAGTCTTTTGG  
f6h8-135 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTTGG  
f6h8-136 AAGCTTCTTATTGCTTCTCAAAACATTAAATGGCTTAGCCGGAGTCCGATAGAGTCTTTTGG  
f6h8-137 AAGCTTCTTATTGCTTCTCATAGCTTTTGATGGGTAGCTGAAGTCCCATATGATTCCTTTGG  
f6h8-138 AAGCTTCTTATTGCTTCTCAAAACATTAAATGGCTTAGCCGAAGTCCGATAGAGTCTTTTAG  
f6h8-139 AAGCTTCTTATTGCTTCTCAAAAGCTTTTGATGGGTAGCCGAAGTCCGAATGAATCTTTGG  
f6h8-14 AAGCTTCTTATTGCTTCTCAAAACCTTTTGATGGGTAGCCGAAGTCTGTATGAGTCTTTGG  
f6h8-140 AAGCTTCTTATTGCTTCTCAAAATTTTCAATGGGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-141 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGATAGAGTCTTTTAG  
f6h8-142 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-143 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-144 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-145 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-146 AAGCTTCTTATTGCTTCTCAAAACATTAAATGGCTTAGCCGAAGTCCGATAGAGTCTTTAG  
f6h8-147 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-148 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-149 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-15 AAGCTTCTTATTGCTTCTCAAAACCTTTTGATGGGTAGCCGAAGTCTGTATGAGTCTTTGG  
f6h8-150 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-151 ---CTTCTTGTTGCTTCTTAAAGCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-152 ---CTTCTTATTGCTTCTCAAAACATTAAATGGCTTAGCCGAAGTCCGATAGAGTCTTTAG  
f6h8-153 ---CTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGATAGAGTCTTTAG  
f6h8-154 ---CTTCTTGTTGCTTCTTAAATCTTTTGATGGGTAGCCAAAGTCCGATAGAGTCTTTGG

FIG. 23D-1K



CTTTGTATCTTCAAAGGAAACATAACTTTAGCTATTGGGAATCGGTTGCCATTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATTTAGCTTTTTCGGAAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGAATCTTCTAACAAGGAAACACTACTTTAGCTTTTGGGAAGCAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATTTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTTATCTTCTAACAAGGAATCAGTACGTAGCTTTTGGGAACGAATTGCGGTTCTAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAAACACTACTTTAGCTTTTGGGAACGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTGCTTTTGGGAACAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATTTAGCTTTTGGGAATCAGTTATGCTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTATAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAAACACTACTTTAGCTTTTGGGAACGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATTTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATTTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCTAACAAGGAAACATTAATTTAGCTTTTGGGAATCAGTTGCTGTTAAAGTTCTTATACT  
CTTTGTATCTTCTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT

FIG. 23D-2K

CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATCAAACACATAACATCTTGTGCATATTTGACTCCAAAACACTAACC 174  
CAATCATACACATGACATCTAGCCATATTTTGATTTCCGAAAACACTAACC 178  
CAAACATACACATGACATCTTGTGCATATTTGACTCTAAAACACTAACC 178  
CAATCATACACATGACATCTAGCCATATTTTGATTTCCGAAAACACTAACC 178  
CAATCATCCACATGACATCTAGTCATATTTTGACTCCCAAACACTAACC 177  
CAATCATACACATGACATCTAGTCATATTTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAGTCCTTTTTTGACTCCAAAACACTAACC 177  
CAATCATCCACATGACCTCTAGTCATATGTGACTCCAAAACACTAACC 171  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCATACACATGACATCTAGCCATATTTTGACTCCAAAACACTAACC 159  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCATACACATGACATCTAGTCATATTTTGACTCCAAAACACTAACC 178  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175  
CAATCATACACATGACATCTAGCCATATTTTGATTTCCGAAAACACTAACC 175  
TAATCATACACATAACATCTTGTCTTATTTTGACACCAAAAACACTAACC 175  
CAATCAAACACATAACATCTTGTCTTATTTTGACTCCAAAACACTAACC 175

FIG. 23D-3K

f6h8-155 ---CTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGATAGAGTTTTTTAG  
f6h8-156 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-157 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-158 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-159 ---CTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGATAGAGTTTTTTAG  
f6h8-160 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAGTCCGATAGAGTCTTTTGG  
f6h8-161 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-162 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-163 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-164 AAGCTTCTTATTGCTTCTCAAAATGTTGATGGTGTATCCGAAGTCCGATAGAGTCTTTTGG  
f6h8-165 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTTGG  
f6h8-166 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTTGC  
f6h8-167 AAGCTTCTTATTGCTTCTCAAAACATTAATGTCCTTAGCCGAGTCCGATAGAGTTTTTTAG  
f6h8-168 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-169 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGTATCCGAAGTCCGATAGAGTTTTTTGG  
f6h8-170 AAGCTTCTTATTGCTTCTCAAAACTTTTGATGGTGTAGCCGAAATCCGATAGAGTCTTTTGG  
f6h8-171 AAGCTTCTTCTTCTCAAAAGCTTTGATGGTGTAGCCAAAGTAAAGTATGTGCTTTTGG  
f6h8-172 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTTTTGG  
f6h8-173 A-----TGGCTTAGCCGAAGTCCGATAGAGTTTTTTAG  
f6h8-174 AAGCTTCTTATTGCTTCTCAAAACATTAATGGCTTAGCCGAAGTCCGATAGAGTTTTTTAG

FIG. 23D-1L

CTTTGTATCTTAACAAGGAAACATTACTTTAGCTTTTGGGAATCAGTTGTGGTTAAAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATTACTTTAGCTTTTGGGAATCAGTTGTGGTTAAAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAAATACTACTTTAGCTTTTGGGAACGGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATAACTTTAGCTATTGGGAATCGGTTGCCGTTCTAATTCTTATACT  
CTTTGTATCTTAACAAGGAAACACTACTTTTCTTTTGGGAACAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACACTACTTTTGCTTTTGGGATCCAGTTGTGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATTAAATTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATAACTTTAGCTATTGGGAATCGGTTGCCGTTCTAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAAACACTACTTTAGCTTTTGGGAACGGTTGCGGTTCTAGTTCTTATACT  
ATTTGTAACCTTCAACAAGGAAACACTACTTTGGGCTTTTGGGAACAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGAAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATTAAATTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATTAAATTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAACAAGGAAACATTAAATTAGCTTTTGGGAATTAGTTGTGGTTCTAGTTCTTATACT

FIG. 23D-2L

**FIG. 23D-3L**

f6h8-175 A-----TGGCTTAGCCGAGTCCGTAATGAGTTTTGTAG  
f6h8-176 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGG  
f6h8-177 AAGCTTCTTATTGCTTCTCAAGCTTTGATGGTGTAGTCGAAGTTTGTATGAGTCTTTGG  
f6h8-178 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGG  
f6h8-179 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGC  
f6h8-18 AAGCTTCTAATTGCTTCTCAAACTTTGATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGG  
f6h8-180 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGC  
f6h8-181 AAGCTTCTTATTGCTTCTCAAAATTTTGTATGGTGTACGAAAGTCCGTAATGAGTCTTTGG  
f6h8-182 AAGCTTCTTATTGCTTCTCAAACTTTTATGGTGAAGCCAAAGTCCGTAATGAGTATTTGG  
f6h8-183 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGG  
f6h8-184 AAGCTTCTTATTGCTTCTCAAAATTTTGTATGGTGTACGAAAGTCCGTAATGATTCCTTTGG  
f6h8-185 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGC  
f6h8-186 A-----TGGCTTAGCCGAAGTCCGTAATGAGTTTTGTAG  
f6h8-187 AAGCTTCCCTATTGCTTCTCAAAACATTAATGGCTTAGCCGAAGTCCGTAATGAGTTTTGTAG  
f6h8-188 -----CTTTGATTGTGTAGCCAAAGTCTGTATGAGTCTTTGG  
f6h8-189 A-----TGGCTTAGCCGAAGTCCGTAATGAGTTTTGTAG  
f6h8-19 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGG  
f6h8-190 -----TTTGATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGA  
f6h8-191 -----TCCATATGATTCCTTTGG  
f6h8-192 AAGCTTCAATATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGG  
f6h8-193 A-GCTTCTTCATGCTTCTAAAGCTTTTATGGTGTAGCAAAAGTCCGTAATGAGTCTTTGG  
f6h8-194 -----TTTGATGGTGTAGCCGAAGTCCGTAATGAGTCTTTGA

FIG. 23D-1M

**FIG. 23D-2M**

CAATCATACATGACATCTAGCCATATTTGATTCCGAAAACTAACC 150  
CAATACTACACATGACATATAGTCTTTTTTTGACTCCAAAACACTAACC 178  
CAATCATACATGACATATAGTCTATTTTGACTCCGAAACACTAACC 178  
CAATACTACACATGACATATAGTCTTTTTTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAAATCTTTTTTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGTCTATTTTGACTCTAAAACACTAACC 178  
CAATACTACACATGACATATAAATCTTTTTTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGTCTATTTTGACTCTAAAACACT 174  
CAATACTACACATGACATATAGTCTTATTTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAAATCTTTTTTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGTCTATTTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAAATCTTTTTTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGCCATATTTTGATTCCGAAAAACTAACC 150  
CAATCATACACATGACATCTAGCCATATTTTGATTCCGAAAAACTAACC 178  
CAATCATACACATGACATCTAGTCGTATTTTGACTCCAAAACACTAACC 154  
CAATCATACACATGACATCTAGCCATATTTTGATTCCGAAAAACTAACC 150  
CAATCATACACATGACATCTAGTCTATTTTGACTCTCAAAA 170  
CAATCATACACATGACATCTAGTCTATTTTGACTCTCAAAA 146  
CAATCATCCACATGACATCTAGTCTATTTTGACTCCAAAACACTAAC 134  
CAATACTACACATGACATATAGTCTTTTTTTTGACTCCAAAACACTAACC 178  
CAATCATATAAATGACATCTAGTCTATTTTGACTCTAAAACACTAACC 177  
CAATCATACACATGACATC-AGTCATATTTTGACTCTCAAAA 145

FIG. 23D-3M



f6h8-195 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATGAATTTTGG  
f6h8-196 ---CTTCTTATTGCTTTTCAAACAATTGATGGCTTAGTCGAAGTCCGATAGATTTTGG  
f6h8-197 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGATTTTGG  
f6h8-198 -----CTTTGATGGTGTAGCCAAAGTCCGATAGATCCTTTGG  
f6h8-199 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGATTTTGG  
f6h8-200 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-201 ---TTCTTATTGCTTCTCAAAAGTTTGTGTTAGTGTAGCCGAAATCCGATAGATCCTCTAT  
f6h8-202 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGATTTTGG  
f6h8-203 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGATTTTGG  
f6h8-204 AAGCTTCTTATTGCTTCTCAAACTTTGATGGTGTAGAGGAAAGTCCGATAGATCCTTTGG  
f6h8-205 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-206 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-207 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-208 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-209 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-210 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-211 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-212 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG  
f6h8-213 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCCGATAGATCCTTTGG

FIG. 23D-1N

CTTTGTATCTTAGAAGGGAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTATAGTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACATTAATTTAGCTTTTGGGAATTAGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTAGAAGGGAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTATAGTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACATTAATTTAGCTTTTGGGAATCGGTTGAGGTTCTATTTCTTATACT  
CTTTGTATCTTAGAAGGGAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCTTATACT  
CTTTGTAGCTTCTAACAAGGAACACACTACTTTAGCTTTTGGGAACCGGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACACTACTTTAGCTTTTGGGAACCAAGTTGCGGTTTCTAGTTCTTATGCT  
CTTTGTATCTTAGAAGGGAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTATAGTTCTTATACT  
CTTTGTATCTTAGAAGGGAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTATAGTTCTTATACT  
CTTAGTATCTTCAACAAGGAATATTAATTTAACTTTTGGGAATCGGTTGCGGTTATAGTTCTTATACT  
CTTTGTATGTTCTAACAAGGAACACTACTTTTGCTTTTGGGAACGTTGCGGTTCTAGTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGATCCAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTGCTAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT  
CTTTGTATCTTCAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTTCTTATACT

FIG. 23D-2N

CAATCAACACATAACATCTTGCTCTTATTTGACTCCAAAATACTAACC 175  
CAATCATAAACATGACATCTAGTCATATTTGACTCCCAAAATACTAACC 175  
CAATCAACACATATCATCTTGCTCTTATTTGACTCCAAAATACTAACC 175  
CAATGATACATATGACATCCTGTAATATTTGACTCCAAAATACTAACC 155  
CAATCAACACATAACATCTTGCTCTTATTTTACTCCAAAATACTAACC 175  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACATCAAGTCATATTTGACTCCAAAACACTAACC 174  
CAATCAACACACATATCATCTTGCTCTTATTTGACTCCAAAATACTAACC 175  
CAATCAACACACATATCATCTTGCTCTTATTTGACTCCAAAATACTAACC 175  
CAATCATACACATGACACCTAGTAATATTTGAAATCCAAAAGCACTAACC 178  
CAATACTACACATGACATATACCTTTTATTTGACTCCAAAATACTAACC 178  
CAATACTACACATGACATATATCTTTTGTGACTTCAAAAACACTAACC 178  
CAATACTACACATGAGATATAGTCCTTTTGTACTCCAAAACACTAACC 178  
CAATACTACACATGAGATATAGTCGTTTTTGTACTCCAAAACACTAACC 178  
CAATACAACACATGACATATAGTCCTTTTGTACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAGTCCTTTTGTACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGCCATATTTGATTCGGAAAATACTAACC 178  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAGTCCTTTTGTACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAGTCCTTTTGTACTCCAAAACACTAACC 178  
CAATACTACACATGACATATAGTCCTTTTGTACTCCAAAACACTAACC 178

FIG. 23D-3N

f6h8-214 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTGTGG  
f6h8-215 AAGCTTCCCTATTGCTTCTCAAAACATTAATGGCTTAGCCGAAGTCCGATAGAGTTTGTAG  
f6h8-216 AAGCTTCTTATTGCTTCTCAAAATTTTCAATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-217 A-----TGGCTTAGCCGAAGTCCGATAGAGTTTGTAG  
f6h8-218 AAGCTTCTTATTGCTTCTCAAAATTTTCGATGGTGTATCCGAAGACCGATAGAGTCTTTGG  
f6h8-219 ---TTCTTATTGCTTCTCAAAATGTTGATGGTGTATCCGAAGTCCGATAGAGTCTTTGG  
f6h8-22 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCTGAAGTCCGATAGAGTCTTTGG  
f6h8-220 AAGCTTTTCTTGTGCTTGTCAAAAGCTTTGTTGGTGTGCCAAAGTCAAGTATAGAGTCTTTGG  
f6h8-221 AAGCTTCTTATTGCTTCTCAATATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-222 -----CTTTGATGGTGTAGCCGATGTCCGATAGACTCTTTGG  
f6h8-223 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCCGATAGAGTTTGTGG  
f6h8-224 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-225 AAGCTTCATATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-226 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-227 AAGCTTCTTATCGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-228 ---CTTCTTGTTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCTGTATGAATTTTGG  
f6h8-229 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-23 ---TTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG  
f6h8-230 AAGCTTCTTATTGTTTCTCAAAACTTTTATGGTGAAGCCAAAGTCCGATAGAGTATTTGG  
f6h8-231 A-GCTTCTTCATGCTTCTCAAAAGCTTATATGCTGTAGCCAAAGTCCGATAGAGTCTTTGG  
f6h8-232 AAGCTTCTTACTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCGATAGAGTCTTTGG

FIG. 23D-10

CTTTGTATCTTAGAAGGGAACACAACTTTAGCTTTTGGGAAGATGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGCAACATTAATTTAGCTTTTGGGAATTAGTTACGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACATTAATTTAGCTTTTGGGAATTAGTTGCGGTTCTTGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACATAACTTTAGCTATTGGGAATCGGTTGCCGTTCAAGTTCCTTATGCT  
CTTTGTATCTTTTAACAAGAAACACTACTTTAGCCTTTTGGGAACCGGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTAGCTTTAACAAGAAACACTACTTTAGCTTTTGGGAACCGGTTGCGGTTCTAGTTCCTTATACT  
ATTTGTATCTTCAACAAGGAACACTACTTTGGCTTTTGGGAACCAAGTTGCGTTCCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAATAAATACCTTTATCTTTTGGGAACCGACTGCCGATCCAGTTCCTTATACT  
TTTTGTATCTTCAACAAGGAACACATTAATTTAGCTTTTGGGAATTGGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTATAAGGGAACACACAACCTTTAGCTTTTGGGAAGCTGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACATAACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACTACTTTTCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAGAAGGGAACACACAACCTTTAGCTTTTGGGAATCAGTTGTGGTTCTAGTTCCTTATACT  
CTTTGTATCTTAACAAGGAACACATAACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTGTAGCTTTAACAAGGAACACTACTTTTAGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT  
CTTTCTATCTTAACAAGGAACACTACTACCTTTACCTTTTGGGAACCGATTGCGGTTCTAGTTCCTTATACT  
CTTTGTATCTCCTAACAAGGAACACACAACCTTTAACTTTTCGGAACCGGTTGTGGTTCTAGGTCCTTATACT  
CTTTGTATCTTCTAACAAGGAACACTACTTTTGCTTTTGGGAACCAAGTTGCGGTTCTAGTTCCTTATACT

FIG. 23D-20

CAATCAACACATAACATCTTGCTTATTTGACTCCAAA 166  
CAATCATACACATGACATCTAGCCATATTTGATTCGAAATAAACC 178  
CAATACTACACATGAGATATAGTCTTTTTTTACTCCAAAACACTAACC 178  
CAATCATACACATGACATCTAGCCATATTTGATTCGAAATAAACC 150  
CAATCATACACATGACATCTAGTCAT-TTTGACTCCAAAACACTAACC 177  
CAATTATCCACTTGACATCTAGTCATATTTGACTCTAAAACACTA 171  
CAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACA 147  
CCATCATACACATGACATCTAGTCATATTTGACTCTAAAACACTA 175  
CAATGATACACATGACATCCTGTAATATTTGACTCTAAAATACTAACC 155  
CAATCAAAACACATAACATCTTGTTATTTGACTCCAAAATACTAACC 175  
CAATACTACACATGACATATAGTCTTTTTTGACTTCAAAACACTAACC 178  
CAATACTACACATGAGATATAGTCGTTTTTTACTCCAAAACACTAACC 178  
CAATACTACACATGAGATATAGTCGTTTTTTACTCCAAAACACTAACC 178  
CAATACTACACATGAGATATAGTCTTTTTTTACTCCAAAACACTAACC 178  
TAAATCAAAACACATAACATCTAGTCATATTTGACTCCAAAATAAACC 174  
CAATACTACACATGACATATAGTGTTTTTTGACTCCAAAACACTAACC 178  
CAATCATACACATGACAACACTAGTCATATTTGACTCCAAAACACTAACC 174  
CAATACTATACATGACATATAGTCTTATTTGACTCCAAAACACTAACC 178  
CAATCATATAAATGACATCCAGTTATATTTGACTGGAAAACACTAACC 177  
CAATACTACACACGACATATAGTCTTTTTTTGACCCCAAAAACACTAAC 177

FIG. 23D-30

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10      20      30      40      50      60
AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-232 AAGCTTCTTACTGCTTCTCAAAATTTTCATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-233 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-234 ----TTCTTATTGCTTCTCCAAAGCTTTGATGGTGTAGCCGGAAGTCCGTAATGATGTAATTAG
f6h8-235 --GCTTCTTAATGCTTCCCAAAACTTTTATGGTGTAGCCAAAGTCCGTAATAAGTCTTTGG
f6h8-236 ---CTTCTTATTGCTTCTCAAAATTTTGTATGGTGTATCCGAAAGTCTGTATGAGTTTTTGG
f6h8-237 -----CTTTGATGGTGTAGCCGATGTCGTAATGAGCCTTTGG
f6h8-238 AAGCTTCTTATTGCTTCTCATAGCTTTGATGGTGTAGCTGAAGTCCATATGATTCCTTTGG
f6h8-239 ---CTTCTTATCGCTTCTCAAAATTTTCATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTAG
f6h8-24 AAGCTTATTATTGCTTCTCAAAACTTTGATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-240 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-241 -----T-GCTTCTTAAAGCTTTGATGGTGTAGCCGGAAGTCCCTATGACTTTTTGG
f6h8-242 ---CTTCTTGTGCTTCTTAAAGCTTTGATGTGTACCAAAGTCCGTAATGAGGTTTTTG
f6h8-243 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGATGTAGCCTAAGTCCGTAATGAGTCTTTCA
f6h8-244 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTGCGGAAGTCCGTAATGAGTCTTTGG
f6h8-245 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-246 -----TTGCTTCTTAAAGCTTTGATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-247 -----CTTTGATGGTGTAGCCGGAAGTCCGTAATGAGTCTTTGG
f6h8-248 AAGCTTCTTATTGCTTCTCAATATTTTCATGGTGTGCGGAAGTCCGTAAGAGTCTTTGG
f6h8-249 AAGCTTCTTATTGCTTCTCAAAATTTTGTATGGTGTAAACGGAAGTCCGTAATGAGTCTTTGG
f6h8-25 AAGCTTCTTATTGCTTCTCAAAATTTTGTATGGTGTACACGGAAGTCCGTAATGAGTCTTTGG
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FIG. 23D-1P

70 80 90 100 110 120 130  
A B C D G T A T C T T C T A A C A A G G A A A C A T T A C T T T A G C - - T T T T G G G A A T C G G T T G C G G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A A C A A G G A A A C A C T A C T T T T G C - - T T T T G G G A A C C A G T T G C G G T T C T A - G T T T T T A T  
C T T T G T A T C T A C A A C A A G - A A C A T T A C T T T A G C - - T T T T G G G A A T C G G T T G C G G T T C T A - C T T C T T A T  
C T T T G T A T C T T C A A C A A G G A A A C A T T A C T T T A G C - - T T T T G G G A A T C A G T T G C G G T T C T A - G T T C T T A T  
A T T T G T A T C T T T A T A A G G A A A C A T T A C T T T C G C - - T T T T G G G A A T T G G T T G C G G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A A T A G G A A A C A T A A C T T T A G C - - A A T T G G G A A T C G G T T G C C G T T C T A - G T T C T T A T  
T T T T G T A T C T T C A A C A A G G A A A C A T T A C T T T A G C - - T T T T G G G A A T T G G T T A C G G T T C T A - G T T C T T A T  
C T T T G A A T C T T C T A A T A A G G A A A C A C A A C T T T A A C - - T T T T G G G A A C C G G T T G T G G T T C T A G G T - C T T A T  
C T T T G T A T C T T C T A G A A G G A A A C A C A A C T T T A G C - - T T T T G G G A A T C A G T T G T G G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A G A A G G A A A C A C A A C T T T A G C - - T T T T G G G A A T C A G T T G T G G T T C T A - G T T C T T A T  
C T T T G T A G C T T C T A A C A A G G A A A C A C A C T A C T T T A G C - - T T T C G G G A A C G G T T G C A G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A A C A A G G A A A C A C A C T A A A T T T G C - - T T T T G G G A A C C A G T T G C G G T T C T A - G T T T T A A T  
C T T T G T A T C T T C T A G A A G G A A A T A T T A C T T T A G C - - T T T T G G G A A G A T G T T G C G G T T C T A - G T T C T T A T  
T T T T G T A T C T T C T A G A A G G A A A C A T T A C T T T A G C - - T T T T G G A A A A A T G T T G C G G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A A C A A G G A A A C A C A C T A A A T T T G C - - T T T T G G G A A C C A G T T G C G G T T C T A - G T T T T T A T  
C T T T G T A T C T T C A A A C A A G - A A C A T T A C T T T A G C - - T T T T G G G A A T C G G T T G C G G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A G A A G G A A A C A T T A C T T T A G C - - T T T T G G G A A G A T G T T G C G G T T C T A - G T T C T T A T  
C T T T G T A T C T T T G A A C A A G G A A A C A T T A C T T T A G C - - T T T T G G G A A T C G G T T G C G G T T C T A - A T T C T T A T  
C T T T G T A T C T T C T A A C A A G G A A A C A C A A C T T T A G C - - T T T T G G G A A C C G G T T G C G G T T C T A - G T T C T T A T  
C T T T G T A T C T T C T A A C A A G G A A A C A  
C T T T G T A G C T T C T A A C A A G G A A A C A C T A C T T T A G C - - T T T T G G G A A A C G G T T G C G G T T C T A - G T T C T T A T

FIG. 23D-2P



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140      150      160      170      180
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC
177
ACTCAATACTACACGACATATAGTCTTTTGGACCCCAAACACTAAC
177
ACTCAATGATACACATGATATCTAGTCATATTTGACTCCAAAACACTAACC
144
ACTCAATCATACACGACAT
176
ACTCAATGATTCACATGACATCATGTAATATTTGACTTCAAAATACTAACC
175
ACTCAATCATACACATGACATCTAGTCATATTTGATTCCAAACACTAACC
155
ACTCAATGATACACATGACATCCTGTAATATTTGACTCTAAAATACTAACC
178
AGTCAATCATATAAAGACATCTAGTCATATTTGACTCGAAAACACTAACC
174
ACTTAATCAAACACATAACATCTAGTCATATTTGACTCCAAAACACTAAC
178
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC
177
ACTCAATACTACACATGACATATAGTCTTTTGGACTCCAAAACACTAAC
167
ACTCAATCAAACACATAACATCTTGCTTTATTTGACTCCAAAATACTAACC
175
ACTCAATCAAACACATAACATCTTGCTTTATTTGACTCCAAAATACTAACC
178
ACTTAATGATACACATGACATCTTGTAATATTTGACTCTAAAATACTAACC
177
ACTCAATACTACACATGACATATAGTCTTTTGTACTCCAAAACACTAAC
177
ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC
168
ACTCAATCAAACACATAACATCTTATCTTATTTGACTCCAAAATACTAACC
155
AGTCAATGATACACATAACATCCTGTAATATTTGACTTTAAAATACTAACC
134
ACTCAAT
85
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC
178
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**FIG. 23D-3P**

f6h8-250 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-251 AAGCTTCTTATTGCTTCTCAAAATTTTGTATGGTGTACACGAAGTCCGTATGAGTCTTTGG  
f6h8-252 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-253 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-254 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTGCGGAAAGTCCGTATGTGCTTTGG  
f6h8-255 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-256 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-257 AAGCTTCTTATTGCTTCTCAAAATTTTGTATGGTGTACACGAAGTCCGTATGAGTCTTTGG  
f6h8-258 AAGCTTCTTATTGCTTCTCAAAAGCTTTGATGGTGTAGCCGAAAGTCGTATGAGTCTTTGG  
f6h8-259 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-26 AAGCTTATTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAAGTCGTATGAGTCTTTGG  
f6h8-260 AAGCTTCTTATTGCTTCTCAAAATTTTCATGGTGTAGCCGAAAGTCGTATGAGCCTTTGG  
f6h8-261 AAGCTTCTTATTGCTTCTAAATATTTTCATGGTGTAGCCGAAATTCGGTATGAGTCTTTGG  
f6h8-262 ---CTTCTTGTGCTTCTTAAAGCTTTGATGGTGTAGCCAAAGTCGGTACGAGTTTTTGG  
f6h8-263 -----CTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-264 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-265 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-266 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-267 -----CTTTGATGGTGTAGCCGAAAGTTTGTATAAGTCTTTGG  
f6h8-268 AAGCTTCTTATTGCCCTCACAAAACTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-269 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGAAAGTCGGTATGAGTCTTTGG  
f6h8-27 AAGCTTATTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAAGTCGTATGAGTCTTTGG

FIG. 23D-1Q

CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACA  
CTTTGTATCTTCAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACAACACTAAATTTC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACAACACTACTTTACC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACA-----AT  
CTTTGTATCTTCTA  
CTTTGTATCTTCTAACA  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTAGCTTCTAACAAGGAAACAACACTACTTTAGC--TTTCGGGAACGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTTCTTCTAACAAGGAAACAACACTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACA-----AT  
CTTTGTATCTTCTA  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACAACACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACAACACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTACAAACAAG-AAACATTACTTTAGC--TTTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTAGCTTCTAACAAGGAAACAACACTACTTTAGC--TTTCGGGAACGGTTGCGGTTCTA-GTTCTTAT

FIG. 23D-2Q

**FIG. 23D-3Q**

f6h8-270 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-271 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-272 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-273 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCTGAAGTCGGTATGAGTCTTTGG  
f6h8-274 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-275 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-276 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-277 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-278 AAGCTTCTTATTGCTTCTCAAAACTTTAATAGTGTAGCTGAAGTCCGTATAAGTCTTTGG  
f6h8-279 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-28 A-GCTTCTTATTGCTTCTCAAAAGCTTTGATGGTGTAGCTGAAGTCCTTATGATTCCTCTGG  
f6h8-280 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-281 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-282 --GCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-283 -----T-----  
f6h8-284 ---CTTCTTGTGCTTCTTAAAGCTTTGATGGTGTAGCAGAAGTCGTATGAGTCTTTGG  
f6h8-285 AAGCTTCTTATTGCCCTCACAAAGCTTTGATGGTGTGCGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-287 ---CTTCTTCTTGTGCTTCTCAAAAGCTTTGATGGTGTAGCCAAAGTCGGTATGAGTCTTTGA  
f6h8-29 AAGCTTCTTATTGCTTCTCAAAAGCTTTGATGGTGTAGCTGAATTCATATGATTCCTTTGG  
f6h8-3 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGGAAGTCGGTATGAGTCTTTGG  
f6h8-30 ---CTTCTTATTGCTTCTCAAAAGCTTTGATGGTGTAGCTGAAGTCCTTATGATTCCTTTGG  
f6h8-31 -----CTTTGATGGTGTAGCAGAAGTCCTCATATGATTCCTTTGG

FIG. 23D-1R

CTTGTATCTACAAACAAG-AA-CATTACTTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
ATTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
ATTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
ATTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
ATTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTTCTAACAACAGAAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTTCTAACAAGAAACACTACTTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
TTTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AA-CATTACTTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
-----ATCTTCTAACAAGGAAACAATACTTTAAC--TTTAGGAACCGGTTGTGATTCTAGGT-CTTAT  
CTTTTATCTCAAGAGTGAAACACTATTTTAGC--TTTGGGAAGATGTGCGGTTCTA-GTTCTTAT  
ATTGTATCTACAAACAAG-AAACATTAATTTAGC--TTTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTGGC--ATTAAAGATTCGGTTGTGGTTCTA-ATTCTTAT  
CTTTGTAACTTCTAACAAGGAAACACTACTTTAGC--TTTGGGAACCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTAGCTTCTAACAAGGAAACACTACTTTAGC--TTTGGGAACCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCTAACAAGGAAACACTACTTTAGC--TTTGGGAACCGGTTGCGGTTCTA-GTTCTTAT  
CTTTGTATGTTCTAACAAGGAAACACTACTTTAGC--TTTGGGAACCGGTTGCGGTTCTA-GTTCTTAT

FIG. 23D-2R

ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 176  
ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTA 174  
ACTCAATGATACACATGATATCCTGTAATATTTGACCCTAAAATACTAACC 177  
ACTCAATGATACACATGATATCCTGTAATATTTGACCCTAAAATACTAACC 177  
ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 177  
ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 177  
ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 177  
ACTCAATGATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 177  
ACTCAAT-ATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 176  
116  
ACTCAAT-ATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 176  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACATTAACC 177  
ACTCAAT-ATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 176  
ACTCAATGATGCACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 176  
ACTCAAT-ATACACATGATATCCTGTAATATTTGACTCTAAAATACTAACC 174  
CCTCAATCATATAACTGACATCTAGTCATAGTTGACTACAAAACACTAACC 113  
GCTCAATCAAACACATAAACATATTGCTTATTTGACTCCAAAATACTAA 173  
ACTCAATGATACACATGA 144  
ACTCAATCATACACATGACATCAAATTATATTTAACTCCAAAACACTAACC 175  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCCAAAA 170  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCGAAAAAACTAACC 175  
ACTCAATCATACACATGACATCAAGTCATATTTGACTCCCAAAA 147

FIG. 23D-3R

f6h8-32 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-33 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-34 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-35 ---CTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-36 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-37 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-38 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-39 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-40 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-41 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-42 A-GCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-43 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-44 ---CTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-45 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-46 -----TTTGA TGGTGTAGCTGAATTCCCATATGATTCCTTTGA  
f6h8-47 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-48 -----TTTGA TGGTGTAGCTGAATTCCCATATGATTCCTTTGA  
f6h8-49 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG  
f6h8-50 -----TTTGA TGGTGTAGCTGAATTCCCATATGATTCCTTTGA  
f6h8-51 AAGCTTCTTATTGCTTCTCAAAGCTTTGATGGTAGCTGAATTCCCATATGATTCCTTTGG

FIG. 23D-1S



**FIG. 23D-2S**

ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 170  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 170  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 170  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTAACC 175  
ACTCAATCATCCACATGACATCTAGTCATATTTGACTCCAAAAACTAACC 178  
ACTCAATCATCCACATTACATCTAGTCATATTTGACTCCAAAA 170  
ACTCAATCATACACATGACATATAGTCATATTTGAATCCAAAACACT 174  
ACTCAATCATACACATGACATTTAGTCATATTTGACTCCAAAA 170  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTAACC 178  
ACTCAATCATCCACATGACATCTAGTCATATTTGACTCCAAAAACTAAC 177  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTAAC 177  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACT 173  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTAAC 177  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTA 172  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATACTACACATGACATATAGTCTTATTTGACTCCAAAAACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGCCATATTTGATTTCCGAAAAACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGCCATATTTGATTTCCGAAAAACTAACC 178

FIG. 23D-3S

f6h8-52 AAGCTTCTTATTGCTTCTCAAGCATTGATGGTAGCCGAAGTACGTATGAGTCTTCGG  
f6h8-53 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGATCCGAAGTCCGTATGAGTCTTTGG  
f6h8-54 -----TTTGATGGTGAGCCGAAGTCCGTATGAGTCTTTGG  
f6h8-55 ----TTCTTATTGCTTCTCAAGTTTTGATGGTGAGCCGAAATTCGTATGAGTCTCTAG  
f6h8-56 AAGCTTCTTATTGCTTCTCAAAACATTAATGGCTTAGCCAAAGTCCGTATGAGTCTTTAG  
f6h8-57 -----TTTGATGGTGAGCCAAAGTCCGTATGAGTCTTTGA  
f6h8-58 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGTGAGCTGAAGTCCGTTTGAGACTTTGG  
f6h8-59 AAGCTTCGTATTGCTTCTCAAAATTTTGGTGATCCGAAGTCCGTATGAGTCTTTGG  
f6h8-60 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGAGCCGAAGTCCGTATGAGTCTTTGG  
-----TTTGATGGTGAGCCGAAGTCCGTATGAGTCTTTGA  
f6h8-61 AAGCTTCTTATTGCTTCTCAAAACATTAATGGCTTAGCCAAAGTCCGTATGAGTCTTTAG  
f6h8-62 AAGCTTCTTATTGCTTCTCAAAACATTAATGGCTTAGCCAAAGTCCGTATGAGTCTTTAG  
f6h8-63 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-64 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-65 AAGCTTCTTATTGCTTCTCAAAACTTTTGATGGTGAGCCGAAGTCCGTATGAGTCTTTGG  
f6h8-66 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-67 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-68 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-69 ---CTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-70 AAGCTTCTTATTGCTTCTCAAAACTTTTGATGGTGAGCCGAAGTCCGTATGAGTCTTTGG  
---CTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGAAGTCCGTATGAGTCTTTAG  
f6h8-71 AAGCTACTTATTGCTTCTCAAAACTTTTGATGGTGAGCCAAAGTCCGTATGAGTCTTTGG

FIG. 23D-1T

CTTTGTATTTCTAACAAGGAAACACTACTTTAGA--TTTGGGAACCGGTGTAGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACATAAATTTAGC--TATTGGCAATCGGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTAACAAGGAAACACTACTTTAGG--TTTGGGAATCGGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACACTACTTTAGC--TTTGGCAACCGGTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACATAAATTTAGC--TTTGGGAATAGTTGCCGTTCTA-GTTCTTAT  
CTTTGTGCTTCAACAAGGAAACATACTTTAGC--TTTGGGAATCGGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACACTACTTTAGC--TTTAGGAACAGTTGCCGTTATA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACATAAATTCGGC--TATTGGGAATCGGTTGCCGTTCTA-GTTCTTAT  
CTTTGTAGCTTCAACAAGGAAACACTACTTTAGC--TTTGGGAACCGGTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAATATTAATTTAGG--TTTGGGAACCGGTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACATAAATTTAGC--TTTGGGAATAGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACATAAATTTAGC--TTTGGGAATAGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTTAACAAGGAAACATACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTTAAATCTTCAACAAGGAAACATACTTTAGC--TTTCGGGAACCGGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACATACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACATAAATTTAGC--TTTGGGAATAGTTGCCGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACATACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACATACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACATACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTTGTAGCTTCAACAAGGAAACACTACTTTAGC--TTTGGGAACCGGTGCGGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACATACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTTGTATCTTCAACAAGGAAACACTACTTTTC--TTTGGGAACAGTTGCCGTTCTA-GTTTAT

FIG. 23D-2T

ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 166  
ACTCAATCATACACATGACATCTAGCCATATTTGATTCGGAAAAACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
AATCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACATTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 154  
ACTCAATCATACACATGACATCTAGCCATATTTGATTCGGAAAAACTAACC 178  
ACTCAATCATACACATGACATCTAGCCATATTTGATTCGGAAAAACTAACC 178  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
ACTTAATCATCCACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
ACTCAATCATACACATGACATCTAGCCATATTTGATTCGGAAAAACTAAC 177  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAAC 177  
ACTTAATCATACACATGACATCTAGTCTTATTTTGACACCCAAAATACTAACC 175  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAACACTAACC 178  
ACTTAATCATACACATGACATCTAGTCTTATTTTGACACCCAAAATACTAACC 175  
ACTCAATACTACACATGACATATAGTCTTTTTTGACTCCAAAACACTAACC 178

FIG. 23D-3T

f6h8-72 -----TTTGATGGTGTAGCCGAAGTCCCGTATGAGTCTTTGA  
f6h8-73 -----TTTGATGGTGTAGCCGAAGTCCCGTATGAGTCTTTGA  
f6h8-74 A-----TGGCTTAGCCGAAGTCCCGTATGAGTCTTTAG  
f6h8-75 AAGCTACTTATTGCTTCTCAAAACTTTGATGGTGTAGCCAAAGTCCCGTATGAGTCTTTGG  
f6h8-76 AAGCTTCTTATTGCTTCTCAAAATTTGATGGTGTACACGAAGTCCCGTATGAGTCTTTGG  
f6h8-77 AAGCTTCTTATTGCTTCTCAAAATTTGATGGTGTACACGAAGTCCCGTATGAGTCTTTGG  
f6h8-78 AAGCTTCTTATTGCTTCTCAAAACTTTTATGGTGAAGCCAAAGTCCCTATGAGTATTTGG  
f6h8-79 -----CTTTGATGGTGTAGCTGAAGTCCCATATGATTCCTTTG  
f6h8-80 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGTGTAGCCGAAGTCCCGTATGAGTCTTTGG  
f6h8-81 AAGCTTCTTATTGCTTCTCAAAATTTGATGGTGTACACGAAGTCCCGTATGAGTCTTTGG  
f6h8-82 -----CTTTGATGGTGTAGCTGAAGTCCCATATGATTCCTTTG  
f6h8-83 AAGCTTCTTATTGCTTCTCAAAATTTGATGGTGTACACGAAGTCCCGTATGAGTCTTTGG  
f6h8-84 AAGCTTCTTCTTGCTTCTCAAAATTTTCATGGTGTAGCCGAAGTCCCGTATGAGTCTTTGG  
f6h8-85 -----CTTTGATGGTGTAGCTGAAGTCCCATATGATTCCTTTG  
f6h8-86 AAGCTTCTTATTGCTTCTCAAAATTTTGTGTTGTACACGAAGTCCCGTATGAGTCTTTAG  
f6h8-87 AAGCTTCTTATTGCTTCTCAAAACATTAAATGGCTTAGCCGAAGTCCCGTATGAGTCTTTAG  
f6h8-88 AAGCTTCTTATTGCTTCTCAAAATTTTGTGTTGTACACGAAGTCCCGTATGAGTCTTTAG  
f6h8-89 -----TTTGATGGTGTAGCCGAAGTCCCGTATGAGTCTTTGA  
f6h8-90 AAGCTTCTTATTGCTTCTTAAAACTTTGATGGTGTAGCCGAAGTCTGTATGAGTCTTTGG  
f6h8-91 -----TTTGATGGTGTAGCCGAAGTCCCGTATGAGTCTTTGA  
f6h8-92 AAGCTTCTTATTGCTTCTCAAAATTTTGTGTTGTAGCCGAAGTCCCGTATGAGTCTTTAG

FIG. 23D-1U

**FIG. 23D-2U**

ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 150  
ACTCAATCTACCCATGACATATAGTCTTTTGTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATAACATATAGTCATATTTGAATCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCA-ATCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGCCATATTTGATTTCCGAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCA-GTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCTACACATGACATATAGTCTTTTGTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCA-GTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGCCATATTTGATTTCCGAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 178  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAA 146  
ACTTAATCATACACATGACATCTAGTCGTATTTGACTCCAAAAACACTAAC 177

FIG. 23D-3U



f6h8-92 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGGAAGTCCGTATGAGTCTTTTAG  
f6h8-94 AAGCTTCTTATTGCTTCTCAAAATTTTGATGGCTTAGCCGGAAGTCCGTATGAGTCTTTTAG  
f6h8-95 --GCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGGAAGTCCGTATGAGTCTTTTAG  
f6h8-96 --GCTTCTTATTGCTTCTCAAAATTTTGATGGTGTAACGGAAGTCCGTATGAGTCTTTTAG  
f6h8-97 AAGCTTGTATTGCTTCTCAAAATTTTGATGGTGTAACGGAAGTCCGTATGAGTCTTTGG  
f6h8-98 AAGCTTCTTATTGCTTCTCAAAACATTAATGGCTTAGCCGGAAGTCCGTATGAGTCTTTTAG  
f6h8-99 AAGCTACTTATTGCTTCTCAAAACTTTGATGGTGTAACGGAAGTCCGTATGAGTCTTTGG  
xf6h8-93 AAGCTTCTTATTGCTTCTCAAAACTTTGATGGCTTAGCCGGAAGTCCGTATGAGTCTTTGG

**FIG. 23D-1V**

CTTCTATCTTAACAAGGAAACATTACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CATTGTATCTTAACAAGGAAACATTACTTTAGC--TTTGGGAATCAGTTATGGTTCTA-GTTCTTAT  
CTTGTATCTTCAACAAGGAAACATAACTTTAGC--TATTGGGAATCGGTTGCCATTCTA-GTTCTTAT  
CTTGTATCTTCAACAAGGAAACATAACTTTAGC--TATTGGGAATCGGTTGCCATTCTA-GTTCTTAT  
CTTGTATCTTCAACAAGGAAACATAACTTTAGC--TAGTGGGAATCGGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTTCAACAAGGAAACATAACTTTAGC--TTTGGGAATTAGTTGCGGTTCTA-GTTCTTAT  
CTTGTATCTTCAACAAGGAAACATAACTTTAGC--TTTGGGAACCAAGTTGCAGTTCTA-GTTCTTAT  
CTTGTATCTTCAACAAGGAAACATAACTTTAGC--TTTGGGAACCGGTTACGGTTCTA-GTTCTTAT

FIG. 23D-2V

ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAAAATAAC 177  
ACTTAATCATACACATGACATCTAGTCATATTTGACTCCAAAAAATAAC 177  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 176  
ACTCAATCATACACATGACATCTAGTCATATTTGACTCCAAAAACACTAACC 176  
ACTCAATCATACACATGACAACTAGTCATATTTGACTCCAAAAAATAA 176  
ACTCAATCATACACATGACATCTAGCCATATTTGATTCGAAAAAATAA 176  
ACTCAATCATCCACATGACCTCTAGTCATATGTGACTCCAAAAAC 171  
AAACAATCATCCACATGACATCAAGTCATATTTGACTCCAAAAATACTAACC 177

FIG. 23D-3V